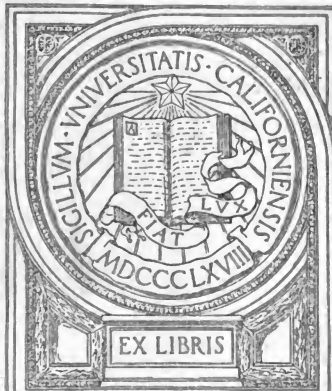


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LECTURES

ON

VENEREAL DISEASES.

BY

WILLIAM A. HAMMOND, M.D.

PHILADELPHIA:

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P R E F A C E.

THE first five of the following lectures were delivered at the Baltimore Infirmary, of which I was at the time—the spring of 1861—one of the attending surgeons. They were published in June and July of that year in the *American Medical Times*, and are now reprinted with but few alterations.

The remaining fifteen lectures were prepared, but were not given, owing to my departure from Baltimore to re-enter the army. They are now written out from my notes, and brought up to the present day, as are also those which were actually delivered. This fact will account for several anachronisms which occur.

These lectures are not published as a complete treatise on Venereal Diseases. They fall far short of that point; and are not, therefore, to be classed with the excellent work of Dr. Bumstead, which is as complete in plan as it is sound in practice, and which covers all the ground a work of the kind can cover, and better, too, than any other volume on the subject with which I am acquainted. They are believed, however, to embody, so far as they extend, in a small compass, the main prac-

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tical points of doctrine and treatment; and they contain some results, based upon my own observations, which are now first published, and which I think are of an important character.

As they were originally intended to represent my own views, rather than to be made up of citations from other authors, I have not deemed it necessary to give, to any great extent, the opinions of others, except when I have adopted them as my own, or when they tended to clear up doubtful points. If the lectures contribute toward extending a knowledge of the important class of diseases to which they relate, they will accomplish the chief end which leads to their publication.

WASHINGTON CITY, D. C.,

September 1st, 1864.

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LECTURES ON VENEREAL DISEASES.

LECTURE I.

DUALITY OF THE VENEREAL POISON—SOFT CHANCRE—INOCULATION—SOFT CHANCRE A LOCAL AFFECTION—INFLAMMATION OF SOFT CHANCRE—PHAGEDENA—BUBO OF SOFT CHANCRE—RECAPITULATION.

GENTLEMEN, I propose making use of the large amount of material which the Infirmary affords for illustration, by delivering to you a series of practical lectures on venereal diseases. I shall not occupy your time with any extensive remarks on the history of these disorders, neither shall I stop to combat views which I hold to be erroneous, nor to eulogize others which may be more in consonance with my own; but I shall endeavor to describe to you the affections in question as they actually exist, and to give you concisely and clearly the opinions which, after much reflection and no small amount of experience, I have been induced to form in regard to them.

In so doing, it is very far from my intention to give you mere descriptions, but I shall try to make you practically as well as theoretically acquainted with the various phases under which venereal diseases are manifested, and this, as you have already had abundant opportunity for observing, can be readily accomplished so far as the number and variety of cases are concerned. In fact, the Infirmary has always been one of the best schools for the thorough study of the important and interesting class of diseases under consideration which the country possesses.

The history of the venereal poison is certainly very interesting, but at the same time extremely unsatisfactory. In truth, nothing definite in regard to its origin has been ascertained, but, as is usual in such cases, conjectures are innumerable. According to one party it is coeval with man; another thinks it originated in the French army before Naples, during the latter part of the fifteenth century; and a third attributes its appearance in Europe to the importation of the disease from America, by the followers of Columbus. This last view has, however, been positively disproved, and the second is doubtless as little entitled to confidence. Still other theories have been broached. One assumes that it is constantly originating from promiscuous connections, a very unphilosophical assumption; Van Helmont regarded it as essentially identical with farcy, and as being derived from horses affected with this disease, and

M. Ricord hints at a similar idea when he throws out the suggestion that it may be produced by the poison of glanders. All these are mere guesses, without a particle of proof to sustain them; but, as often happens in other branches of science, hypothesis may lead to truth by exciting well-directed inquiry. The inhabitants of the Canaries and Azores, who fancied that at times they could perceive the dim outline of the Western world, doubtless had no small influence, as Humboldt asserts, in encouraging Columbus to make his voyage of discovery.

My own opinion is, that these diseases are of great antiquity, for we find constant reference to them in the older writers, and even in the Scriptures you will discover allusions to affections which in our day we should call venereal. If you desire to study this point, you can do so from almost any of the systematic works on the subject.

One thing we do know, viz., they are more frequent than any other diseases; one-third of the population of civilized countries, men, women, and children, being subject to some one or more of the manifestations they produce, either primary disease, constitutional syphilitic affections, or others which have been transmitted to them by hereditary influence.

Is there more than one venereal virus? You have already discerned, from the remarks which from time to time I have made to you relative to cases under

treatment, that I admit two species of venereal poison: First, that which gives rise to a simple, non-infecting, soft chancre; and second, that which causes an indurated one, liable to be followed by constitutional syphilis. Besides these, we have two kinds of virulent gonorrhœa; one caused by the deposit of the matter of a soft chancre on a secreting mucous surface, and another due to the contact of the pus of an indurated chancre with such a surface. These are all the varieties of infectious venereal diseases which I am able to recognize as primary disorders, and I think I shall be able to demonstrate to you the fact that these species do actually exist.

Are the two primary kinds of poison I have mentioned convertible one into the other? By no means; they are essentially distinct. The virus of a soft chancre cannot give rise to an indurated chancre, nor the virus of this latter to a soft chancre. Each inoculates with its own specific poison, causing a sore of the same character as the parent chancre. The two differ very essentially in their appearance and in the consecutive phenomena which may occur, and it is exceedingly important, as I shall point out to you, that you should be able to recognize these differences.

I am aware that in holding the view that gonorrhœa is primarily due to the deposit of chancrous virus upon a mucous surface, I am contending against many of the most eminent syphilographers who have

written upon the subject. I am not, however, alone; and if I cared to do so, might bring forward many names familiar to you in support of this opinion. I have, however, adopted the theory in question from facts which have come under my own personal knowledge, and not because it was held by some one else. We will consider this whole matter more in detail when we come to the subject of gonorrhœa, and I shall then bring forward the facts and arguments upon which my views are based.

I have said that there are two kinds of chancre, the soft and the indurated. Let us proceed at once to the consideration of these species of venereal ulcers; and first, of the soft chancre. A soft chancre does not always appear immediately after an individual has had connection with another affected with this variety of venereal disease, though in general the ulcerative process commences immediately. A period varying from two to fourteen days sometimes follows, during which no evidence of having become diseased is present. There is, however, no true incubation, as in those cases in which the ulcer is delayed appearing absorption of the matter has also been delayed. At some time within the period I have mentioned, generally on the fifth or sixth day, a small pustule is observed for instance near the frænum, or a small abraded surface secreting a discharge is for the first time perceived. If the surface was intact when the virus was deposited, the first form, the

pustule, follows; if, on the other hand, an abrasion or a fissure existed, so that the part to which the virus was applied was deprived of its epidermis, the second form ensues. Recollect these two different modes of origination. The pustule is never found unless the virus has been applied to a surface in a state of integrity, nor the superficial ulcer unless the epidermis has in some manner been previously removed. Let us suppose we have the pustule to deal with. An itching of the part is generally felt a short time before any elevation of the epidermis is perceived. This is not, however, as some suppose, an invariable antecedent. A small pimple or pustule is next seen. This is of variable size, usually not larger than a small pea, and ordinarily considerably smaller. This pustule in two or three days breaks, or the head is rubbed off, and thus an ulcer is produced. The latter may be of almost any form, but generally it is round or ovoidal; the edges are perpendicular; it is usually but not always deep, and the bottom of it presents a dirty-gray appearance, is rough, and sometimes excoriated into little holes. The pus which flows from it is in most cases of healthy character, but is occasionally thin and discolored with blood. The ulcer does not remain of its primitive size; it spreads, enlarging equally in all directions, and in ordinary cases, after attaining the size of a dime, it ceases to grow. In a few days it commences to cicatrize. A gray somewhat hardened border

forms around it, and, gradually diminishing in circumference, at the end of about four weeks it is entirely healed.

From the appearance of the secretion of a soft chancre, as exhibited by microscopical examination, we obtain a very valuable diagnostic mark. A small drop of the fluid from such a sore is placed on a glass slide, and covered in the ordinary manner with a piece of thin glass. When viewed with a one-fourth of an inch objective it is seen to be composed of true pus cells floating in a homogeneous transparent medium. The addition of a very little acetic acid places the matter beyond doubt by causing the nucleus to become visible. The cuts 1 and 2 represent

Fig. 1.



Fig. 2.



the cells as seen before and after the addition of acetic acid.

Such are the appearances and characteristics of a simple or soft chancre, as ordinarily met with. The deviations I shall afterward point out. There is one important feature, however, to which I have purposely not yet alluded, and that is the *softness of the base*. When the thumb and finger are applied to opposite

sides of the chancre, no induration is felt; the base is perfectly soft, yielding readily to the slightest pressure, and scarcely distinguishable, so far as the touch goes, from the same part of the body in a normal condition.

Now this is a most important feature—one by which the simple or non-infecting chancre may be most readily distinguished from the other form, the indurated or infecting variety—and I cannot too strongly impress upon you the necessity of your making yourselves thoroughly acquainted with the *feel* of these ulcers. The non-infecting sore, in its natural condition, never has an indurated base. It is essential, however, to recollect that an appearance of induration may sometimes be present. Thus, if much inflammatory action exists, there may be phlegmonous hardening, such as is felt at the base of a boil; but, as Ricord remarks, this, though readily distinguished from specific induration by the experienced touch, cannot in words be separated from it. Another form of hardening may be given to the base of a chancre, by the use of the various washes which are employed, but this also cannot in competent fingers be confounded with the true induration. I only mention these facts now in order that you may be reminded of their existence, but will dwell more particularly upon them when we come to the diagnosis of indurated chancre.

A soft chancre is generally solitary, but not unfre-

quently two or more are present. This is another diagnostic mark of some value, for an indurated chancre rarely has a fellow.

In situation it may be anywhere, except perhaps upon the head and face. It has not yet been detected upon these parts of the body, which is certainly a very singular circumstance. A chancre, therefore, on the head or face is always indurated.

A soft chancre is much more contagious than an indurated one. It is for this reason that they are more frequently met with. Four-fifths of all the chancres which occur are of the simple non-infecting kind.

Inoculation affords us a ready means of determining the character of the chancre. A small portion of the pus of a soft chancre inserted into the thigh (for instance) of the diseased individual causes the formation of another chancre of the same kind: provided always—and it is important to recollect this fact—the original chancre is not far advanced in the process of healing. If, having reached its height, it has diminished considerably in size, the matter from it will not cause another chancre. At this stage it has lost its specific character, and has become a simple non-contagious ulcer, incapable, physiologically or artificially, of any longer propagating its species. You will remember that a short time since I performed inoculation with the pus of a soft chancre in process of healing, and with a negative result.

I have frequently known men have connection with females under my treatment who were affected with healing soft chancres without contracting any disease, and I have often known men, affected with chancres of similar character and condition, have sexual intercourse with women with perfect impunity to the latter.

This form of chancre may be inoculated on the inferior animals without difficulty.

But there is another feature, a very important one—one for the mention of which you are already prepared—and that is, that the soft chancre is essentially a local disease, never infecting the system, and consequently never producing those horrible constitutional ravages which are frequently met with as sequences of the indurated chancre. You perceive, now, how necessary it is for you to be able to make a correct diagnosis, not only with a view to proper treatment, but that you may at once relieve the mind of your patient of the terrible apprehensions he generally experiences.

In a subsequent lecture on the duality of the venereal poison, I shall enter at length into this subject.

But if the soft chancre does not infect the system, it produces other effects which sometimes are scarcely if at all less calamitous. It is that form which is pre-eminently liable to inflammation, ulceration, and phagedena; the latter, when unchecked,

the most terrible complication which attends venereal diseases. To these modifications of the course of the simple chancre, I now ask your attention.

A soft chancre is liable to be attacked with an excessive amount of inflammation. In such cases, the appearance of the ulcer is materially modified, and the surrounding tissues become swelled, painful, and hot. The chancre itself, instead of retaining its rather indolent characteristics, assumes a deep-red color, or it may be changed to a purple hue from excessive congestion. The secretion from its surface becomes thin and acrid, excoriating the parts over which it flows, and giving rise, during the first period of the inflammatory action, to fresh chancres. If the process is not arrested, gangrene and consequent sloughing of the affected parts may ensue.

Now, one of the chief causes of this complication is the application of irritating substances, such as corrosive acids, nitrate of silver, sulphate of copper, etc., to a chancre which ordinarily would do very well without them, or in which more efficient cauterization is required; but the most frequent is deficient stamina in the individual affected. This may be due to debility, dram drinking, or to the inordinate use of mercury. Again, if the chancre is situated upon the frænum or corona, by impeding the retraction of the prepuce the discharge may accumulate around the glans and give origin to the extra-morbid process; or it may be due to mechanical irri-

tation, friction against the clothing, or during coition. I have frequently found both these latter causes the active agents. In cavalry soldiers who, during long marches, are obliged to spend several hours each day in the saddle, chancres which are doing well will become inflamed and cause a good deal of subsequent trouble. A man who entered the Infirmary a few weeks since, and who is still in the house, you will recollect caused a high degree of inflammation in a soft chancre on his prepuce by tying a string around his penis.

The specific character of the chancre is lost if the inflammatory action continues longer than four or five days. This fact has been ascertained by many who have studied the subject, and I have had abundant opportunity of determining the point, both by inoculation and by observing that individuals so affected did not communicate chancres to others with whom they had sexual intercourse. A Mexican woman who was under my care, with a large inflamed chancre at the fourchette, had connection in one night with seven dragoons, all of whom escaped disease. A soft chancre may become the seat of excessive ulceration without there being any increased inflammatory action. Under such a condition, the chancre generally enlarges, and may attain an enormous size, unless checked. When it heals at one border and enlarges at the other, the ulceration is said to be serpiginous. You have recently had several opportunities of wit-

nessing this complication. It is one which is difficult to treat successfully unless constant watchfulness is exercised, and prompt, active treatment adopted.

The chancre attacked with excessive ulcerative action is still capable of being inoculated. I have several times satisfied myself of the truth of this assertion. Ricord mentions a case on the authority of M. Puche, in which a serpiginous chancre yielded inoculable pus after lasting three years.

Lastly, we have phagedena as a complication of soft chancre. This is almost always due to some constitutional cause, to intemperate habits, excessive sexual indulgence, bad food and air, but above all to the influence of mercury. Several years since, when I was stationed in New Mexico, many terrible cases of phagedenic chancres came under my observation. Most of them were due to the effects of mercury. Medical men were scarce, and persons who contracted chancres were in the habit of treating themselves, and always with mercury, which they took till salivation was produced, and frequently for a longer period. Many cases were due to excessive sexual indulgence, the cause being doubtless rendered more effective from the fact that the Mexican women were excessively filthy, and had intercourse with any one who chose to ask them. With soldiers who were kept under greater restraint and who were not treated indiscriminately with mercury, phagedena was not met with in anything like the same proportion of cases as in citizens.

In phagedena the surface of the chancre becomes dark, sometimes almost black. A purple areola surrounds it, the discharge changes to a dark-colored ichor, which excoriates the parts it touches; the ulcer enlarges with great rapidity, and the tissues in the neighborhood break down and disappear more rapidly than under the influence of simple ulceration. Arteries are exposed, and dangerous hemorrhage may thus be caused. In one case which came under my notice, the femoral artery was perfectly denuded as far as the middle of the thigh, and in several places a probe could be passed down to the femur. The genitals are often entirely destroyed, and I knew of one case in which the anterior wall of the abdomen was perforated, giving rise to peritonitis. There is no limit to the action, except the power of the patient to survive under such extensive destruction. As you can readily perceive, the constitutional disturbance is often excessive, and is always well marked. There are debility, fever, and eventually hectic, and at last the patient, completely worn out, succumbs.

The prospect of recovery depends altogether upon early and prompt treatment. If seen in its early stage and properly dealt with, especially if the mercurial cachexia is not present, phagedena can generally be arrested; but under other circumstances it terminates sometimes speedily, sometimes slowly, but always surely in death.

The secretion from a chancre attacked with phagedena is frequently inoculable, though I have often failed in obtaining positive results. The resulting chancre is liable, if produced upon the diseased individual, to assume a phagedenic character, but not if a healthy person is used for the experiment.

Another occasional accompaniment of the soft chancre is bubo. This, as ordinarily understood, is an inflammation and enlargement of a lymphatic gland of the groin. In the bubo you have, as M. Ricord has very clearly shown, and as my experience also establishes, a valuable means of discriminating between the two species of chancre. The bubo attendant upon the soft chancre is not constant, and may depend upon one of two very different causes. It may be either a simple inflammation of a lymphatic gland, due to the irritation produced by the ulcer—just as a corn on the foot causes a swelling in the groin, or a sore hand an enlargement of a gland of the axilla—or it may be caused by the direct absorption of the virulent pus from the chancre. Thus there are two essentially distinct species of bubo liable to be produced by the variety of venereal ulcer under consideration.

The situation of both is the same, being always in the superficial glands of the groin, but the character and progress of the two differ materially. That which is due to simple inflammation may terminate in resolution or it may suppurate. In the latter

case, it heals kindly and does not furnish pus which is inoculable. The virulent pus has not caused it; it is simply symptomatic, and it may occur at any period during the existence of the chancre.

The other form of bubo which may attend a soft chancre is, as I have stated, due to the absorption through the lymphatics of the pus of the chancre. It is therefore specific, and the pus from it, when inoculated, gives rise to a chancre of the simple or non-infecting kind. It differs also from the simple adenitis in the fact that it always suppurates. If allowed to open spontaneously, or if it be incised, the edges of the wound become chancrous, and the ulcer liable to all the accidents, especially phagedena, to which the soft chancre is subject.

It may occur at almost any period. Ricord mentions a case, which he quotes from M. Puche, in which, three years after the commencement of a soft chancre, a bubo furnishing inoculable pus was formed. The longest period I have witnessed is seven months. In this case a bubo formed, with the pus of which I caused several simple chancres on different persons, seven months after the commencement of the original chancre. The edges of the wound made in opening it became chancrous, and as it exhibited a strong tendency to ulceration, the ulcer was cauterized with nitric acid. It healed slowly, and five years afterward the man was in good health.

I shall return to the subject of bubo in a sub-

sequent lecture, and will then consider the whole matter more in detail.

To recapitulate: we find that the soft chancre is a local disease; that it never infects the general system; that it may be inoculated if the process of reparation has not advanced far, and this upon the patient affected; that it is the kind of chancre pre-eminently liable to complications, such as inflammation, ulceration, and phagedena; and that it is occasionally accompanied or followed by two kinds of bubo, one a simple symptomatic adenitis non-virulent, the other caused by the absorption of chancrous pus, always suppurating, the pus formed being inoculable, and therefore truly of a specific character.

In the next lecture we will take up the treatment of this form of venereal disease, and I now proceed to bring under your immediate observation cases illustrating the points touched upon this morning.

LECTURE II.

TREATMENT OF SOFT CHANCRES—TREATMENT OF INFLAMED SOFT CHANCRES—PARAPHIMOSIS—GANGRENE—TREATMENT OF SERPIGINOUS SOFT CHANCRES.

IN the last lecture the subject of soft or simple, non-indurated, non-infecting chancre, was considered. I pointed out to you how this form of venereal disease could in general be recognized, and how important it was that you should be able to discriminate between it and the indurated and infecting chancre. The more important complications which attend the progress of the soft chancre were also alluded to, as were likewise the two species of bubo which sometimes accompany or follow this variety of venereal ulcer.

IN the present lecture, I design indicating to you the plan of treatment which I have found best suited to this species of disease; and as there are a number of cases in the house in which it is being carried out, I think I shall be able to inculcate the principles which should guide you, by that best of all methods—observation.

YOU will be much more frequently called upon to treat simple than indurated chancres. Out of one hundred chancres, seventy-five will be of the former character. Fournier makes the proportion somewhat

smaller. Thus, out of three hundred and forty-one cases, one hundred and twenty-six were indurated, and two hundred and fifteen simple. M. Puche has found the ratio to be the same that I have stated, one in four being indurated. My notes show that of two hundred and eighteen cases of chancre, in which I have noted the character, fifty-four were indurated, and one hundred and sixty-four soft, so that the proportion is as near as possible to that above given.

Now there are two circumstances to which I have called your attention, which pre-eminently influence us in the treatment of the simple chancre. 1st. You must not forget that it is altogether a local disease. 2d. That it is liable to extensive ulceration and phagedena. The former fact does away with any necessity for the exhibition of mercury, and the latter renders such a course not only improper, but highly dangerous. At the same time it is desirable to destroy as soon as possible the specific character of the chancre, and to convert it into a simple non-virulent ulcer.

The reasons for this are very obvious. You will recollect that I stated to you that the soft chancre was exceedingly contagious. A person may have half a dozen or more present at the same time, either as original sores, or, what is more usually the case, caused by the pus from a single chancre. These are more generally met with on the genital organs, or in their neighborhood, from the fact that the virulent

pus has more intimate relations with these parts. It is not uncommon to find them about the anus of both sexes, on the scrotum, the labia, thighs, etc. But the pus may be carried to other regions by the fingers; and consequently no part of the body, unless it is the head, is exempt from the contagion of the simple chancre. By destroying at an early stage the specificity of the chancre, the contagious character is also annihilated, and new chancres prevented.

Another reason for this treatment is, that the liability to the formation of a virulent bubo is greatly lessened, and if it is sufficiently prompt, altogether destroyed.

Now the manner in which this may be most effectually done is by cauterization. There is no end to the caustics which have been recommended for the purpose. Vidal, who, however, did not lay sufficient stress upon this principle of treatment, employed the nitrate of silver. Ricord formerly used the Vienna paste, a mixture of quick-lime, five parts, and caustic potash, six parts, made into a paste with alcohol; and the monohydrated nitric acid, the acid nitrate of mercury, chloride of zinc, the actual cautery, and numerous others have been lauded by their proposers. I have employed all of these at times, but have found nothing so manageable, and at the same time so effective, as the sulphuric acid and charcoal paste recommended by Ricord. This is prepared by

taking strong sulphuric acid, and making it into a paste with sufficient finely powdered charcoal. The chancre is covered with this, and the mixture is allowed to remain undisturbed for eight or ten days. At the end of this period the paste falls off, bringing with it the slough which it has produced, and leaving underneath a healthy sore, the specific character of the chancre having been entirely destroyed.

In the majority of cases, therefore, as soon as you have definitely ascertained that a soft chancre is present, provided always that you see it before it has commenced to heal, apply the paste, and cover the part with a piece of lint spread with simple cerate. Let it remain, changing the lint as occasion requires, till the slough is spontaneously detached. After this event has taken place, dress the healthy sore which now exists with a solution of tannin in water, one, two, or three grains to the ounce, and it will, in the great majority of cases, speedily heal.

The inconveniences of this plan are—first, that it causes very considerable pain; and second, that it is sometimes difficult to apply the paste to the chancre, owing to the situation in which it occurs.

The first is not a very serious objection, and when we take into consideration the purpose of our treatment, one not entitled to come in conflict with it. The annoyance from this source is certainly not greater than that caused by the other powerful escharotics mentioned; and, so far as my observa-

tion extends, much less than that produced by the nitric acid. It is well, however, to mitigate the pain, when severe, by opium, of which a full dose may be given.

The other objection mentioned is of more consequence. It is undoubtedly difficult to manage the paste, when it is necessary to apply it to the vagina, or to any other part of the body where opposed surfaces come in contact, for the reason that ulceration may be thus caused in perfectly healthy tissues. To some portions of the body, as the rectum and urethra, it does not at all admit of being applied, as it would be almost impossible to keep it in place.

I think, however, that with proper care you will generally be able to use this paste with advantage, when it can be employed at all. I have frequently applied it to chancres seated in the little pouch between the vagina and the neck of the womb. To do this, it is of course necessary to use the speculum. In addition, I employ a glass rod with a cup-shaped depression at one end, the end being enlarged, with which to bring the paste in contact with the chancreous surface. I then place a dossil of lint spread with cerate, and several more wet with water, over this last. The patient is then kept in bed till the acid has been absorbed into the diseased part, which is accomplished in five or six hours. In this way, I rarely have any trouble.

In using this or any other escharotic for the de-

struction of chancre, you must not be timid. As Ricord has well said, it must be applied to a surface considerably greater in circumference than the chancre, and you must also put on enough to soak well into the base, and through the thickness of the ulcer to the healthy tissue below. If a spot no larger than the head of a pin be left untouched, your trouble and your patient's pain will go for naught, as the surface left after the detachment of the eschar will become inoculated afresh. Deal with it therefore in the spirit of liberality, if you wish to be successful in its management.

When the chancre is situated within the rectum, I prefer to use the nitric acid to destroy its specificity. This agent may be readily applied with a glass rod, having previously dilated the bowel, and brought the parts well into view with the speculum. A dossil of lint thoroughly soaked in olive oil is next inserted, and left in as long as is convenient. It may be necessary to repeat the application.

Recently I have suggested the use of pure bromine as an escharotic to chancres; and the trials which have been made with it in the Blackwell's Island Hospital and some of the military hospitals of Washington City prove it to possess very decided advantages over other escharotics. It should be applied with a glass rod or a pointed stick of wood to the whole surface of the sore, and a narrow ring of sound tissue at the entire circumference.

As to urethral chancres, you will never find them seated beyond the fossa navicularis. In this position they can be brought into sight with the urethral speculum, and the nitric acid applied in the manner above described.

The treatment which I have recommended is not applicable to the soft chancre in process of healing. As I have already stated to you, after reparation has advanced, the specific character of the chancre is very much lessened, if not entirely lost, and the sore is nothing more than a simple ulcer. At this stage it is to be treated with astringents or slightly stimulating applications. Among the best of these is the wash of tannin previously mentioned. Many cases which enter the Infirmary are already in process of reparation, and therefore are at once subjected to this treatment. Occasionally when the granulations are too exuberant, I destroy them with the nitrate of silver freely applied; and when they are deficient, I stimulate the surface by the gentle application of the same substance.

Besides the tannin lotion, sulphate of zinc, acetate of lead, permanganate of potash, and nitrate of silver solutions may be used. These should be weak, and should be frequently applied, or, what is still better, the chancre should be kept constantly moist with them. Ointments are not, in my opinion, as efficacious as lotions.

I have said that this is the best course to pursue

in the majority of cases. It often happens, however, that in persons of good condition in life, of healthy constitution, and who can be made to understand the necessity of perfect cleanliness and submission to proper hygienic rules, no medical treatment other than the application of mildly detergent washes is required. The chancre is covered with a piece of lint kept wet with a weak solution of permanganate of potash, made by dissolving two or three grains of the pure crystals in an ounce of distilled water; and if the patient is warned against manual or sexual contact, confined to regular and not too stimulating diet, and directed to wash the sore and its neighborhood several times a day with a similar solution, the case proceeds without difficulty to a favorable termination. It is surprising, or rather it would be surprising if we were unacquainted with the pathology of this form of venereal ulcer, how little is required in such cases to remove the diseased condition.

Cleanliness is the most essential measure to be adopted. The sore should be washed frequently, and the dressings changed at each ablution. Soap and water will answer as a detergent when solution of permanganate of potash cannot be obtained; but nothing is equal to this latter agent. It destroys fetor, neutralizes the poison, and keeps the parts clean and in a condition strongly promotive of the healing process. In women with chancres situated within the vagina, a syringe must be used.

As to constitutional treatment, it is rarely that any is required. If there is any great debility, iron and quinine may be given with advantage. The bowels should always be kept open, and the diet should be attended to so far as to take care that nothing indigestible is eaten, or excess of any kind committed. Beyond this, no special precautions are necessary. If your patient is in the habit of taking a glass of wine at dinner, there is no reason why he should not continue to do so. In fact, I am satisfied that surgeons who cut off wine, coffee, beef-steaks, cigars, etc. from patients in the habit of using them, do more harm than good.

A patient afflicted with chancre should avoid sexual intercourse. Aside from the dishonesty of the matter, with which, however, it does not come within the scope of these lectures to concern ourselves, connection is injurious, as tending to produce inflammation, and perhaps, under certain circumstances, ulceration and phagedena. If there is any tendency toward erotic excitement, lupulin, or, what I have generally found much better, camphor, may be given with advantage.

I have now, I believe, considered sufficiently the treatment of soft chancres when they run a perfectly regular course. In the next place, the accidents to which they are liable require our attention.

The first of these to be considered is inflammation. This may occur at any period, may have no assign-

able cause, or may be due to mechanical or medicinal irritation, as has already been stated. Its presence contraindicates the employment of escharotic or stimulant substances. Emollient applications, such as mucilage of flax-seed, warm water, poultices, etc., are to be used. One of the best and most elegant articles consists of a cataplasm of chamomile flowers. This retains its heat and moisture for a lengthened period, and exerts a very soothing influence over the inflamed tissues. It should be changed frequently. In addition, the most perfect rest in bed should be enjoined, as moving about not only mechanically irritates the part, but increases the constitutional disturbance. A mild purgative should be given, and then opium in doses of a grain every four or five hours should be administered. In addition, much benefit will be derived from the employment of the tincture of the chloride of iron in large and frequently repeated doses. I have witnessed the most decided results from the use of this substance, especially when there is a tendency to gangrene. I usually give it to the extent of thirty or forty drops four or five times a day.

General blood-letting is, I think, never necessary; and the local abstraction of blood, though sometimes admissible, will seldom be called for. Should it be deemed advisable, a few leeches may be applied to the inflamed tissues in the vicinity of the chancre, taking care that the bites do not become inoculated.

Stimulants are more generally serviceable. When the pulse is frequent, the pain dull, and of an aching character, and the parts livid and unhealthy looking, much benefit will be derived from the employment of porter, wine, or brandy, in moderately large quantities. In such cases, alcoholic stimulants, with the iron as mentioned, will act like a charm. I have witnessed this too frequently to be mistaken.

Phymosis and paraphymosis may occur as consequences of the inflammatory engorgement.

In the former, beware of endeavoring to retract the prepuce, if any considerable effort is required to effect it, or you may cause paraphymosis, which is much more troublesome. In both, you will find that warm applications and the soothing plan of treatment will generally do all that is necessary to effect a cure. Should gangrene threaten, run a director under the prepuce, and slit it up with the probe-pointed bistoury till the constriction is removed.

In paraphymosis, mild attempts may be made at reduction by compressing the glans gradually and firmly, at the same time pressing the ring of prepuce forward with the index fingers and thumbs of both hands. Should this plan not succeed, and should the constriction be so great as to threaten mortification, the stricture should be divided by running a straight, sharp-pointed bistoury under it, and cutting outward. If any part remains undivided, it can be cut with the

scalpel; after which operation, the chamomile cataplasm should be applied.

If gangrene should occur in spite of all your efforts to prevent it, mildly stimulating applications, such as dilute nitric acid, or the dilute solution of the chloride of zinc, may be employed with advantage. After the inflammation has in a measure subsided, the sloughs, if still adherent, may be removed with the knife. Both in phymosis and paraphymosis, it is the prepuce that generally suffers, and not the glans.

In the next place, ulceration requires consideration, as one of the accidents to which the soft chancre is liable. I have already called your attention to the characteristics of this complication. The management of it requires both patience and skill, but ordinarily is not attended with any great difficulty, unless the form of ulceration be serpiginous, in which case the surgeon may be thwarted for a long time in his efforts to effect a cure.

In ordinary cases of excessive ulceration the sulphuric acid paste is generally the best application that can be used. The specific character of the ulcer is destroyed by it, and a healthy sore left after the detachment of the eschar, which is not so liable as the chancre to enlarge. At the same time opium given internally to the extent of a grain, night and morning, is a useful adjunct. If the sore produced by the escharotic should show a tendency to spread, strapping with adhesive plaster is an excellent means

of arresting it, and at the same time a chalybeate with the opium should be given.

The serpiginous ulcer is more difficult of cure. Months, and even years, sometimes elapse before permanent reparation is effected. I am disposed to think, from what I have seen of such cases, that a scrofulous taint is always present, and certainly the results of the treatment I have adopted for them would seem to support this view. I have tried the sulphuric acid paste in this form, as well as other escharotics, but have almost invariably found that the resulting ulcer was possessed of the same tendency to spread as the original one. Mercury, given internally or applied locally, I have always found to aggravate the morbid condition, although Acton appears to have some confidence in its efficacy.

Arsenic acts better. I have employed it both internally and locally, Fowler's solution for the former, and the arsenious acid for the latter. One grain of the acid rubbed up with one hundred grains of white sugar, and the twentieth part sprinkled over the ulcer every day, and fifteen drops of Fowler's solution taken three times per day, will frequently cause a very favorable change.

But I have derived more satisfaction from the use of iodine than from any other agent. Internally I give it in the form of Lugol's solution, accompanying it with some preparation of iron, and occasionally with cod-liver oil, while at the same time I apply

the strong saturated tincture to the ulcer and neighboring parts every day. I have never seen a case resist this treatment. I am, therefore, anxious to impress its advantages upon you, for these serpiginous chancres are very annoying things both to patient and surgeon. I am sorry there is not a case now in the house, for I should like to make you acquainted with its features, and also with the method of treatment mentioned, by ocular demonstration. In practice you are not likely to meet with many instances. During the last thirteen years I have treated twenty-two cases, but then I have had all kinds of people to deal with, and for a part of the time mentioned resided in localities where venereal diseases were more frequent than any other. However, I shall have opportunities of bringing this form of complication before you ere long, and in the mean time will relate to you the details of a case which a few years since came under my charge.

J. T. contracted a chancre on the prepuce, for which he was treated by the local application of the nitrate of silver, and the internal administration of the protiodide of mercury. The chancre continued to enlarge, and the nitrate of silver was changed for sulphate of copper, and at length strong acetic acid was employed. The gums became sore from the mercury, which was then stopped, and the iodide of potassium substituted. Not getting any better, he applied to me.

I found on the prepuce a chancre extending from the frænum to the scrotum, and about half an inch in width. Its original position had been fully an inch to the right, and it had gradually reached its present location, at the same time having trebled in length during the past six months. It was not straight, but wavy. There was but little appearance of inflammation about it. The base of it was hard, from medication, and the floor of a dirty-gray color. The amount of discharge from it was not great, neither was there any bad smell about it. Inoculation gave a negative result. Notwithstanding the size of the sore, I applied the undiluted nitric acid freely to it. In a few days an extensive slough was detached. The ulcer looked healthy, and I flattered myself it was about to cicatrize. I was, however, mistaken. It did heal on one side, but advanced on the other until it had assumed a horse-shoe form. During all this time the patient was taking the bichloride of mercury in doses of the one-sixteenth of a grain three times per day. This was continued till his system was fully under its influence, when, it being very evident that no good result was to be obtained from its use, I discontinued it.

The patient had been over three months under my charge, and was no better than before he came to me. The ulcer had entirely surrounded his penis, being still the shape of an elongated horse-shoe. I now ascertained, what I ought to have found

out before, that the patient's family were scrofulous; a brother and two sisters having enlarged lymphatic glands in the neck, and his mother having extensive cicatrices in the same situation. I therefore determined to try the efficacy of iodine in his case, and accordingly administered Lugol's solution, and applied the strong tincture of iodine to the ulcer; at the same time full diet and porter were directed. Within a week the signs of amendment were evident. The arms of the horseshoe became much smaller, while the arched portion ceased to extend. Then it commenced to cicatrize at both places, and in about six weeks had entirely healed. For a year afterward, at least, he was in perfectly good health. I then lost sight of him, but have no doubt that he remained cured.

I have a case of serpiginous chancre now under my charge, in which for the last two years all the ordinary methods of treatment have been tried without effect. It occupies the left side of the glans, and is of semicircular shape. Although the patient has only been under the iodine treatment for twelve days, he has already commenced to improve, and the chancre is healing from the entire circumference. In his case I am also using cod-liver oil and iron, for the reason that he was pretty well broken down in constitution.

You are not to suppose that all cases are as amenable to treatment as those I have cited. I have,

however, as has been mentioned, never treated a case of serpiginous chancre ineffectually with iodine. Sooner or later the patient gets well, but it may be four or five months before this desirable result is attained. You should, therefore, persevere with the treatment I have recommended.

In the next lecture I shall consider the treatment of phagedena and of the buboes produced by the soft chancre.

LECTURE III.

RECAPITULATION—INJURIOUS EFFECTS OF MERCURY—TREATMENT
OF PHAGEDENA—TREATMENT OF BUBOES—DIAGNOSIS OF BUBOES.

IN the last lecture I considered the treatment of the soft chancre as it runs its regular course, and of two of the accidents to which it is liable—inflammation and ulceration. I told you that the non-indurated or simple chancre was altogether a local affection, and one that required only local means to arrest its progress. You have seen many cases in this Infirmary which abundantly prove the truth of this view. You have seen chancres, which had taken on a strong reparative action, and which were therefore no longer of specific character, get well under the simple application of a solution of tannin in water. They would have cicatrized without anything. The astringent only accelerated the cure. You have seen, when the chancre was still progressing, the sulphuric acid and charcoal paste applied, and you have witnessed how, after a few days, the slough became detached, leaving a healthy sore exposed which rapidly healed. Under neither condition was any constitutional treatment employed, unless when from

debility a tonic was required, and this was always iron and quinine.

It may seem like too much repetition, but I feel that I cannot too frequently urge upon you the uselessness—the impropriety of administering mercury in the treatment of the simple chancre. I am sure that the cure is retarded by it, and that a disposition to phagedena is often engendered by its action; and yet how uniformly in this country is mercury given for the treatment of this class of venereal ulcers! A patient has a chancre or a sore of some kind on his penis, and, without endeavoring to ascertain its character, the bichloride or the protiodide, or some other preparation of mercury, is prescribed, and perhaps mercurial ointment is in addition rubbed every night into his thighs. Salivation is produced, the chancre does not heal, and more mercury (or another course, as it is called) is administered. At length the gums become horribly sore, ulcers appear in the mouth and throat, pains in the bones are produced by the least change in the weather, and perhaps an eruption makes its appearance on the skin. The chancre, if it has not got well in spite of the treatment, is now exceedingly liable to phagedena. If this occurs, of course the danger is very much increased; in any event, the miserable victim is broken down in health, and the span of his life materially shortened.

In many cases what is called constitutional syphilis is nothing more than the horrible condition produced

by mercury administered in the treatment of soft chancres, which would not under any circumstances have been followed by syphilis. Ulcerations, pains in the bones, necrosis, cutaneous eruptions, and a failing of the powers of life, make up a combination which is too often regarded as a sequence of the venereal ulcer, but which is due in many cases to a failure to distinguish between the soft and indurated chancres, and to consequent maltreatment.

Look at the man in St. John's ward, whom we have seen daily for the last month. Ulcers in his nostrils, part of his superior maxillary bone gone, and a large hole existing in consequence in the roof of his mouth. Scarcely a tooth in his head, his gums ulcerated, his breath fetid, his general health almost destroyed. And yet this man never had any venereal sore but a soft chancre, and consequently has never had constitutional syphilis. But he has taken mercury almost constantly for the last two years, and hence his deplorable condition. Happily he is improving under the use of the iodide of potassium, which, as you know, removes mercury from the system with great certainty.

We cannot wonder at this indiscriminate employment of mercury in chancres. It is advised in almost all the text-books of surgery in use in this country, and has been handed down from generation to generation as a principle of medicine of inestimable value. He has a chancre, therefore he must be

mercurialized. Let us rather adopt the maxim: He has a *soft* chancre, and therefore he should *not* be mercurialized.

Moreover, mercury has obtained a false reputation in syphilis, from the fact that chancres have got well under its use without the occurrence of constitutional symptoms. Such cases unjustly exalt a remedy, the proper value of which I do not wish to underestimate, but which should be allowed to stand on its own merits.

In the next place I called your attention to the treatment of the inflamed chancre, a condition which, as I mentioned to you, is too frequently induced by insufficient cauterization—irritation in fact without cauterization. Sulphate of copper, acetic acid, and nitrate of silver will not do to use as escharotics when the chancre is fully formed. They only add to the irritation already existing. When this state is present, heat and moisture, properly applied, are the principal agents to be employed. If gangrene occurs, tonics and stimulants internally, with mildly stimulating applications to the part, are to be had recourse to.

Excessive ulceration was next considered. In the serpiginous form I directed your attention to the use of iodine as a remedial agent capable, in my opinion, of exercising a greater curative influence over this form of the disease than any other with which I am acquainted.

In the present lecture I wish to bring before you the principles which should guide you in the treatment of phagedena, and the buboes originating from soft chancres.

I have already dwelt sufficiently on the causes of phagedenic action, and the pathology of this complication of the soft chancre. The treatment of it requires promptness and decision on the part of the surgeon. With the exercise of these qualities it can generally be arrested. The first thing to be done to a phagedenic chancre is to entirely destroy the morbid character of it. This is effected by some one of the escharotics I have mentioned, freely applied. The sulphuric acid and charcoal paste is that which I have generally preferred. The whole surface of the sore is to be covered with it, and the surrounding skin as far as the diseased action appears to extend. You already know the action of this paste, and I will not, therefore, dwell longer upon it. Do not try any milder caustics; they will be unavailing, and but increase the morbid action.

Though I have had no opportunity of testing the virtues of bromine in phagedena, there can be no doubt, from the effects which it has been shown to produce on hospital gangrene by Surgeon M. Goldsmith, United States Army, and others, that it would prove a very excellent remedy; a better one perhaps than any yet suggested.

The actual cautery has been recommended, and is

certainly an efficacious means of destroying a phagedenic chancre. The iron should be raised to a white heat and freely applied. I do not think, however, that it is preferable to the last-mentioned remedies, and it is certainly more terrifying to the patient.

But there is something else to be done. Phagedena most generally depends upon a constitutional difficulty. Mercury has been given to excess, or the individual is scrofulous, or he has become depressed mentally and physically by his affliction, or he has lived improperly. It is therefore necessary to rectify all this. Good diet should be given, plenty of fresh air should be afforded, and, above all, some one of the preparations of iron should be administered. I have tried nearly all of them, and cannot but agree with Ricord that the potassio-tartrate is the best. It seems to be almost a specific against phagedenism. The formula which I generally use is—

R_x.—Ferri et potass. tart. ℥i;
Aquæ, ℥x.

Of this I give half a fluid ounce three times per day, and at the same time direct the diseased part to be kept constantly moistened with it both before and after the detachment of the slough caused by the caustic paste already mentioned.

But you will find cases that resist all treatment, and in which the patient, worn out by the discharge,

and irritation produced, gradually succumbs. I have seen several such, and terrible cases they were. In all of them I am sure the progress of the disease might have been arrested by the treatment I have recommended, if they had been subjected to it sufficiently early. Everything depends upon prompt and decided action. When the disease has acquired much headway, when the phagedenic surface is several square inches in extent, it is a difficult task to stay the morbid process. But the principles of treatment do not vary, and no matter how large the ulcer I should not hesitate to apply an effectual escharotic to it. The irritation would be great, but might be subdued by opium or chloroform. I cannot conceive of its leading to worse results than the unchecked phagedena. The potassio-tartrate should also be used as before directed, but in somewhat larger quantities—as high as a drachm for a dose—and the strength should be supported with alcoholic stimulants.

Ricord mentions that in two cases of phagedenic chancres which came under his notice, the subjects were attacked with erysipelas, and in consequence cured of the first-named disease. Without, therefore, positively asserting it, he is disposed to regard erysipelas as a specific for phagedena—rather a bold supposition to form from two cases. However, there may be something in it. No one else, to my knowledge, has observed anything of the kind, nor, so far

as I am aware, noticed the occurrence of the two diseases in one person. We should not reject M. Ricord's hypothesis, but we should be careful about accepting it without further proof.

And next, in regard to the treatment of the buboes produced by the simple chancre. These, as you will recollect, are of two kinds: one a simple non-virulent adenitis due to irritation, the other a specific abscess caused by the absorption of the pus from the chancre. The one capable of resolution, the other always suppurating. You have seen many examples of both. There are several now in the house which you have had ample opportunity for studying, and to which I have daily directed your attention.

Now the fact that the simple adenitis may terminate in resolution, while the virulent bubo always suppurates, must be our main guide in the treatment of these affections. It is therefore important, if possible, to be able to distinguish one from the other at the earliest possible stage of their progress.

I am not sure that this can always be done, but there are some circumstances which are of considerable service in assisting us to form a correct diagnosis.

In the first place, the simple adenitis advances slowly, and is generally unattended with pain. The gland enlarges, but evinces a disposition to remain in this condition. It is soft, presenting, therefore, in this respect a striking difference from the indurated bubo of the infecting chancre, to which I shall in a

future lecture ask your attention. Should it suppurate, it does so indolently; and when the skin over it breaks or is opened, the pus is discharged without the edges of the wound becoming inoculated. Sometimes the gland continues to occupy the cavity, as is the case in the man now in St. John's ward. It must be destroyed before the ulcer can heal.

The virulent bubo, on the contrary, is almost invariably of rapid growth; suppuration takes place early, and the inflammatory action is accompanied with considerable pain. The integument covering the abscess, if not punctured, sloughs, leaving a large open sore—a true chancre. The pus from this bubo is of course inoculable. You saw me not long since demonstrate this fact to you. The gland is destroyed early, and a cavity of large size, requiring a long time to be filled up, remains.

As I have said, the ulcer left after the opening of the virulent bubo—the bubo of absorption, as Ricord calls it—is a true, soft, non-infecting chancre, one liable to phagedena in perhaps a greater degree than the original chancre. Why this is so I do not know, unless it is that by this time the patient's constitution has become broken down, or the large quantity of mercury which in all probability he has taken has commenced to exercise its deleterious effects upon his system. So far as my experience goes, I have seen many more phagedenic chancres in the groin than on the penis of the male, or genital organs of the female.

You see, therefore, how different must be the treatment for the two species of bubo under consideration. For the one, the simple adenitis, discutient lotions, such as that of the subacetate of lead or the chloride of ammonium, should at first be tried. These may be conjoined with pressure, not with a truss, as some surgeons recommend, for it is apt to lead to ulceration, and almost always increases the pain, but by means of a graduated compress, held in place, and firmly too, by the groin bandage which you have so often seen in operation here. Another way of employing pressure is by means of collodion. The swelled gland is covered daily with three or four coats of this substance applied with a camel's-hair pencil. This dries almost as soon as it is put on, and soon forms a dense covering. As in drying contraction takes place, it exerts no small amount of pressure. The objection to it, however, is that it does not admit of the use of any other local application. If you are disposed to trust to pressure alone it does very well.

The tincture of iodine, and the ointment, are also very valuable applications, and frequently of themselves cause the restoration of the enlarged gland. For some years, however, I have employed a preparation of iodine which possesses very decided advantages over either the tincture or ointment. You have seen it frequently used here. It is a solution of iodine in glycerin. To one ounce of glycerin I

add twenty grains of iodide of potassium, and then dissolve in it forty grains of iodine. You can alter the proportions, if you please, so as to make it either stronger or weaker. The iodide of potassium increases the solubility of the iodine, and should be about half as much in quantity.

The iodide of lead ointment is also a very valuable application to be made to these inflamed glands. A portion as large as a pea is to be rubbed in night and morning. I have several times seen buboes of the non-virulent kind disappear under the action of this agent.

If, however, all efforts to effect dissolution should fail, are we to allow it to open spontaneously, or are we to incise it? I think there can be no doubt that the latter is the preferable course, and it should be performed early in order to save as much of the skin as possible. If the abscess is allowed to break, the skin almost always sloughs to a considerable extent, and an ugly-looking sore is left, which only heals after a long time has elapsed.

In regard to the character of the incisions, I prefer Vidal's method, of numerous small ones made horizontally into the base of the tumor, to an extensive cut laying it open its whole length. The advantages have been, in my hands, that the healing process was much more rapid, and I have never witnessed the formation of sinuses, which some writers state so frequently follow this method of operating.

You have seen this plan pursued here with the best results.

But a method which I prefer even to the foregoing is one which I have employed for several years past with very excellent results. It consists in passing two or three small setons through the base of the swelling. These are formed of several strands of silk, and are inserted with a common surgeon's needle. The pus drains slowly off, and a mild inflammatory action is produced by the setons in the walls of the abscess. Pressure is applied, and as the pus escapes the walls of the cavity are brought in apposition. The setons are now removed, and it generally happens that adhesion takes place, and that the cavity is thus entirely obliterated.

I have not had an opportunity this season of showing you the beneficial results of this method. Some of you, however, will doubtless recollect the case in which it was employed last year during the short time that I had the surgical charge of the Infirmary. The patient entered the house with a very large abscess of the groin, the result of a non-virulent bubo. I passed two setons through its base at right angles to each other, and applied pressure. In two days the pus had entirely escaped, and in a week afterward the cavity was altogether obliterated, and the patient, a sailor, was discharged. I saw him a few days since in the street, and he informed me he had had no further trouble.

It is not every case that admits of this treatment, for the reason that frequently the swelling is not sufficiently elevated above the surrounding parts to allow of the management of the needle with facility. It ought to be passed through the base of the abscess, and not through its summit, otherwise sloughing is apt to occur, as was the case in some of my early trials.

The danger of opening a bubo would not perhaps strike you as being worth mentioning; and when we think of the frequency with which the operation is performed with impunity, the risk certainly cannot be regarded as very imminent, and yet I once lost a patient, a soldier, all from this very simple affair. He had a large bubo, which I laid open its whole length, (it was before I knew the advantages of the methods I have mentioned.) Pyæmia followed, and he died with all the symptoms of purulent absorption. After death, abscesses were found in his liver, and collections of pus in his lungs and spleen. This is the only instance of the kind with which I am acquainted, and I mention it more as a surgical curiosity than anything else. Pyæmia has, however, followed the opening of other abscesses, and of course there is no reason why the operation on buboes should be specially exempt from its occurrence.

So much for the simple adenitis, the non-virulent bubo, the pus of which is laudable with no specific

properties, and therefore not inoculable; next we have the chancreous bubo, the pus of which is specific, and from which true chancres may be produced, to consider.

As I have already told you, this bubo is caused by the direct inoculation of the lymphatic gland with the chancreous matter carried to it by the lymphatic vessels. As Ricord has emphatically said, the abscess formed is a depot of chancreous pus. The main facts in regard to its symptoms and pathology are, that it progresses rapidly, that it is generally attended with pain, and that it invariably suppurates. The treatment, therefore, should differ materially from that required for the other variety. There is no use in applying discutient lotions; no use in iodine; no use in pressure—all in fact are injurious. What you want to do is to hasten suppuration. This is accomplished by heat and moisture. The chamomile cataplasm is the best vehicle for these agents I know of. Other poultices will answer, or even warm water applied by means of several folds of flannel, and covered with oiled silk, will relieve the pain, and bring matters to a head.

After you are satisfied that pus is formed in sufficient quantity, that is, when the whole lymphatic gland has suppurated—a point which you will determine by your tactile sensibility—lay the abscess open so as to allow the freest channel for the escape of the pus. And now comes the main part of the treatment.

You may be doubtful whether or not you have a virulent bubo to manage. If you see the bubo from the first, or if you can rely upon the account of it given by the patient, you are not likely to be mistaken. In any event, you will lose nothing at this period by charging the point of a lancet with the pus from the bubo, and inserting it into the thigh of the patient. If you have a chancreous bubo to deal with, a chancre will be produced at the point of inoculation. This is first evidenced by the redness circumscribing the inoculated spot, and which is present after the first eighteen hours. At about the fortieth to the forty-eighth hour a little pustule is formed, with a black summit caused by extravasated blood. This is the chancreous pustule, and is to be cauterized with nitric acid, Vienna paste, sulphuric acid, and charcoal paste, or with what is less severe and answers perhaps equally well at this stage, nitrate of silver freely applied.

Having obtained an affirmative result from the inoculation, you have no longer any doubt as to the character of the bubo, or, as it is now, the ulcer. You have in fact a true soft chancre to treat, one which is peculiarly liable to be attacked with phagedena. You should, therefore, at once proceed to apply the escharotic paste freely to the bottom and edges of the sore. Undoubtedly this causes severe pain, but this does not usually last more than three or four hours, and is not greater than that caused by

the nitric acid or Vienna paste. After the paste is applied, the part should be covered with lint spread with simple cerate, and bandaged. In the course of ten days the paste and slough come away, and you have a healthy non-specific ulcer left, which heals without difficulty.

You have seen this process gone through with here, and I have already sufficiently described it, so that there is no necessity for me to enlarge more upon its operation. If you do not destroy the specificity of the chancre, it will almost certainly enlarge.

You perceive I prefer to open this form of bubo with a long incision. The multiple openings of course are not applicable, for the reason that they become inoculated, and you have half a dozen chancres to treat instead of one, and, moreover, you have no opportunity of applying the paste with advantage, unless you can get free access to the interior.

This concludes all that I have to say to you, at present, relative to the soft chancre and its complications. In the next lecture we will enter upon the consideration of the indurated and infecting chancre.

LECTURE IV.

RECAPITULATION—INFECTING, INDURATED, OR HUNTERIAN CHANCRE—INDURATION—EXUDATION OF INDURATED CHANCRE—MICROSCOPICAL CHARACTERISTICS—INDURATED BUBO.

WE have heretofore only considered one species of venereal ulcers, the soft, non-infecting chancre, and the accidents to which it is liable. We have seen that this variety is altogether a local disease, causing no constitutional affection, except, under certain circumstances, the excitement or debility which may attend all long-continued or severe local diseases. You have witnessed the truth of this assertion in the frequent examples of soft chancre which have been, or are now, in the house. Many of them have lasted a long time, yet in not a single instance has there been the least manifestation of constitutional syphilis.

We have seen, too, that the complications to which the soft chancre is liable are exceedingly important, and are really more to be dreaded than the original affection. Yet these complications are altogether local, never causing constitutional syphilis, and therefore never converting the non-infecting into an infecting chancre.

It has also been pointed out to you, that as the soft chancre is a local disease, the treatment must be mainly local, and that it consists chiefly in destroying its specific character by escharotic substances. I shall not recall to your minds the details which have already been fully brought before you. They have been doubly impressed upon you from the examples in which you have seen them carried out.

But, gentlemen, we come now to a chancre of a far different character: the indurated chancre, the infecting chancre, the true syphilitic chancre, the chancre *par excellence*. It is the indurated chancre, because it alone possesses a true indurated base; it is the infecting chancre, because it alone poisons the system; it is the syphilitic chancre, because it alone causes syphilis; and it is the chancre *par excellence*, because it alone possesses all these characteristics which I have mentioned—characteristics which have caused it to be studied by the most eminent men in the profession; which have rendered it a terror to mankind, and which have therefore placed it high in the pathological scale above its more humble congener.

Man alone is subject to this form of chancre, and consequently syphilis is altogether a human disease. All the attempts which have been made to inoculate animals with the virus of the infecting chancre have failed. I have several times repeated experiments which have been made by MM. Puche, Cullerier, and others relative to this point, but have never suc-

ceeded in producing any local or constitutional disturbance on the dogs, rabbits, and other animals which were the subjects of my observations. The matter of a soft chancre can, however, without much difficulty be made to produce its specific results in the lower animals.

What do we know of the history of this chancre? Not much, previous to Hunter's investigations, although there is no doubt but that induration had been noticed by syphilographers before Hunter directed attention to this circumstance. It is, however, so generally associated with this great physiologist's researches, that the indurated chancre is frequently known as the Hunterian chancre.

Without stopping to dwell upon the opinions and experiments of intermediate writers, we come to those of our own day, and first among these we find M. Ricord. In spite of his many unsustained theories, and notwithstanding his dogmatism and vacillation, we cannot hesitate to award to him the most exalted position among syphilologists. He, following the course which Hunter had indicated, excelled him in the number and variety of his experiments, and drew from them deductions which, if not always correct, have constituted the study of venereal diseases a science at once philosophical and beautiful.

Ricord has always insisted upon the importance of induration, and though for many years holding to

the doctrine of a single syphilitic virus, he has long taught that induration and constitutional infection were most intimately related. He thought, however, that the induration was caused by other circumstances than a distinct and specific virus.

But I will not detain you now with the discussion of the views which Ricord and other syphilographers hold, as I propose to enter more at length into this subject in another lecture. I shall therefore at once proceed to point out to you the characteristics of the indurated, or infecting chancre.

Unlike the simple chancre, the indurated chancre has a period of incubation, from the fourth to the fourteenth day being the period after connection during which it generally makes its appearance. The average time is about the fifth day. A gentleman who was under my charge a short time since for an indurated chancre of the frænum, assured me that it did not show itself till the end of the sixth week after any connection. A similar case is related by Hunter, but it is not so well authenticated as the foregoing. Such instances, however, are altogether exceptional, and unless you know that your patient has no motive for deception, you should be careful how you believe any statement of lengthened incubation.

An indurated chancre may appear either as a pustule or an excoriation, under the same conditions which I have pointed out when treating of the

simple chancre. If the epidermis is intact, you have it originating as a pustule; if it is abraded, you have the excoriation. Up to the period of induration, there is no essential difference between the chancre under consideration and the non-infecting variety. This pathognomonic sign, this necessary accompaniment of the infecting chancre, makes its appearance ordinarily about the fifth day. According to my experience, this is the most usual period. Ricord puts it somewhat later, assuming the third day as the earliest time for the manifestation of induration. Now I am sure I have seen induration appear before the third day. I have several times seen it present from the very first, under circumstances where no doubt could exist in regard to the matter. In the army, soldiers who have anything suspicious about their genital organs, make their appearance at the hospital at the earliest practicable moment. It is often possible, also, to fix the exact period of connection; and therefore, as you perceive, certainty can frequently be arrived at in venereal diseases, in regard to points which, in civil practice, are difficult to elucidate. But I shall, I am sure, impress the fact of the very early occurrence of induration more forcibly upon your minds, by giving you the particulars of a case in point, which I select from five similar ones, of which I have the notes.

An infantry soldier came to me, complaining of an itching of his penis. At the time, the command with

which I was on duty was marching from Laguna, New Mexico, to Doña Ana, in the same Territory. The evening previous to the soldier applying to me, we had encamped on the outskirts of a small town, Las Lunas, and the man informed me, in answer to my question, that he had then and there had sexual intercourse with two Mexican women. Upon examining him carefully, no pustule or abrasion were to be perceived. The itching, however, was very annoying, and was felt immediately in the center of the frænum. I directed it to be covered with simple cerate, and ordered him to come again at the expiration of twenty-four hours. He did so. A pustule was then commencing to form, and upon feeling the base, I had no difficulty in detecting well-marked induration. I allowed the sore to go on, simply dressing it with a weak solution of sulphate of zinc. It ulcerated in the usual way, a well-marked indurated chancre being produced. Mercury was given internally. On the fifth day a swelling appeared in the groin, and a fully-developed indurated bubo was the consequence. I was separated from this detachment soon afterward, and lost sight of the man for several months. I saw him once subsequently. The chancre had healed, but he had well-marked syphilitic sore throat and skin eruption.

Now, the points in this case which are important are—

First. The short period of incubation, thirty-six

hours only elapsing till a well-formed pustule was developed.

Second. The appearance of the induration synchronously with the pustule.

There can be no doubt either in regard to the exact period of connection, as the man had no opportunity for having sexual intercourse for twelve days before he was infected, and I ascertained positively that he had not availed himself of the privilege at that time.

As to the induration preceding the pustule or excoriation, I have only to say that I have never seen it, without, however, presuming to deny, as does Ricord, that such an occurrence ever takes place.

Now, in regard to the character of this induration, it is in general so well marked that in ordinary cases you will rarely run any risk of mistaking it for anything else, after you have become, by experience, familiar with its feel. Take hold of a chancre possessing this characteristic with the thumb and forefinger pressing against its opposite edges, and you will experience, ordinarily, a sensation as if a split pea (to use Bell's very excellent simile) is placed immediately under it. The induration does not extend beyond the base of the chancre; it is perfectly abrupt and circumscribed. This is one form, and the most common under which induration appears; but there is another, particularly important on account of the delicacy of touch which may be neces-

sary for its discovery. Ricord calls this the parchment induration, and the term expresses very exactly the character of it. It feels precisely as if a piece of parchment were placed directly under the floor of the chancre, and extending to its circumference. It requires some tact, at times, to detect this variety of induration. You will recollect that in speaking of the soft chancre, I mentioned to you that an appearance of induration might sometimes be present, owing to various other causes than specificity. The soft chancre may have hardness at the base, from phlegmonous action, or from the effects of astringent or caustic washes, or from the cicatrix which forms around it as it heals. The first of these differs from the specific induration in the fact that it extends beyond the base of the chancre, and is not abrupt; the second differs from induration in the feeling which it communicates to the fingers, but which feeling cannot be explained in words, and can only be learned by experience; it soon disappears when the applications which have caused it are intermitted. The third is only felt at the edges of the chancre, and is, moreover, like the last named, of different character. This difference between hardness and induration I have frequently pointed out to you in the wards of the Infirmary, and I shall not, therefore, attempt the difficult task of explaining it orally.

There are some parts of the body in which indu-

ration is more distinctly manifested than in others. Thus, on the corona it is more prominently marked than on the prepuce; upon the labia, the clitoris, and the nymphæ, more than on the cervix or the mucous membrane of the vagina. At the anus it is extremely difficult to detect, and some authors have doubted its occurrence at all on the os uteri. I have, however, seen one well-marked case of indurated chancre on this portion of the body in which secondary symptoms supervened, and Ricord has seen others. Upon the lips and tongue induration is generally well marked.

The cause of this difference is probably due, as Ricord supposes, to the difference in the quantity of lymphatic vessels distributed to a part. Where these are plenty, the induration is decided, and *vice versa*.

The indurated base has been submitted to microscopical examination by Robin and Marchal, who detected as the principal elements an increased amount of white fibrous tissue, and a considerable amount of amorphous matter. I have also several times examined this substance microscopically, but never found anything but an increased amount of connective tissue in various stages of development. My examinations do not differ essentially in their results, therefore, from those above referred to. So much for the induration at present, though at a future time I shall return to the subject; there are

other features of the infecting chancre to which I wish to draw your attention.

The indurated chancre is seldom large, rarely larger than a half dime, and is not accompanied with as much irritation as attends the soft variety. The edges of the chancre, instead of being perpendicular, are inclined toward the center of the base, so that it presents a cup-like appearance. The bottom of it is generally even and shining, and of a light-gray color, though sometimes red. The discharge from it is not plentiful as in the soft chancre, and is different microscopically. As I have already mentioned to you, the secretion from the surface of the soft chancre is puriform. When it is submitted to microscopical examination it is seen to be mainly composed of pus corpuscles of perfectly normal structure. On the other hand, the secretion from an indurated chancre is thin, and, when examined with the microscope, instead of numberless pus globules a few only are seen. The morphological elements are principally epithelial cells. When acetic acid is added to the fluid, the pus corpuscles dissolve without giving any evidence of the existence of a nucleus. Doubtless, however, this is present, but undergoes solution with the cell wall. We have seen that the simple chancre is generally multiple; the infecting chancre, on the other hand, is usually single. M. Fournier found, that of 456 patients affected with indurated chancre 341 had only one, 86 had two, 20 had three,

and 5 had four, 2 had five, 1 had six, and 1 had nineteen; making altogether 115 cases in which they were multiple. The indurated chancre, therefore, being single in three out of four cases.

M. Clerc found the indurated chancre single in 224 cases, and multiple in 43, the instances of the latter being less than a sixth of the whole.

My own experience is to the same effect; of 168 cases of indurated chancre in which I have noted down the circumstance, I find that 141 were single, and only 27 multiple, a little less than one-sixth of the whole number.

The reason for this you already know from what has previously been said to you. An individual has an indurated chancre but once, and consequently he is not liable to contract fresh chancres from an original sore. There is, therefore, in general but one way by which more than one indurated chancre can exist upon the same person, and that is by the simultaneous inoculation of several distinct parts of the body. A portion of chancrous matter may be deposited for instance in the fourchette, another portion near the urethra, another portion on the cervix uteri. Under such circumstances we may have three distinct chancres progressing synchronously.

Owing to the fact that an individual has an indurated chancre but once in a lifetime, we have one of the most certain methods of distinguishing this form of chancre from the soft variety. The secretion from

an indurated chancre, when inoculated on the affected individual, gives negative results; no chancre is formed: whereas there is perhaps no limit, or at most an exceedingly remote one, to the number of successful inoculations which may be practiced on one person with the matter of the simple chancre. M. Lindman, who may fairly claim to exhibit in a pre-eminent degree that devotion to science which so frequently characterizes her votaries, has inoculated himself successfully nearly 3000 times.

You must not, however, understand me to say that an individual who has once had an infecting chancre, can absolutely never have another. Small-pox, scarlet fever, and measles, as a rule, occur but once, yet occasionally we meet with persons who have them twice. But I believe that the immunity from indurated chancre is greater with those who have once had this sore than that given by any other infectious disease with which we are acquainted. I have several hundred times endeavored to inoculate individuals with the virus from indurated chancres on their own persons, and never once with an affirmative result.

As has been already said, the secretion from an infecting chancre is altogether different, microscopically, from that of the non-infecting one. In the latter you will recollect that true pus is formed, while, as you will see by taking a little of the exudation of an infecting chancre under the microscope, no pus is present. It consists of epithelium, broken-

down connective tissue, and of imperfect lymph globules floating in a turbid serum, (Fig. 3.) Mr. Henry Lee lays great stress on these microscopical differences, and I think they are of much weight in enabling us to form a correct diagnosis.

Fig. 3.



But there is another fact of importance connected with the inoculation and contagion of these chancres which requires attention. You will doubtless recollect that, in speaking of the soft chancre, I stated that when it is far advanced in the process of healing it loses in a great measure its specific character, and is no longer capable of being propagated. This view is contrary to that held by Ricord and his followers, who contend that a non-indurated chancre retains its virulent character to the last. We will not stop now to discuss this point. In regard, however, to the infecting chancre there can be no doubt; it becomes less virulent when it ceases to progress, and when it

has commenced to heal loses its virulent characteristics entirely. It can no longer be propagated by inoculation. You must not forget this fact in your practical studies, for it is one of very great importance.

The indurated chancre is not so liable to complications such as inflammation, excessive ulceration, or phagedena. It is quite a rare event to find an infecting chancre thus attacked. I have seen but two cases of phagedena supervening on an indurated chancre, and both of these were in New Mexico.

Another phenomenon of the indurated chancre is the indurated bubo, to which reference has already been incidentally made. This is an almost constant companion, Ricord thinks an invariable one; but I am satisfied that in some cases it may be prevented by the timely administration of mercury. I should say it is inevitable, if mercury is not given so as to produce its characteristic effects upon the system at a very early period of the disease. A few weeks since a gentleman came to my office with a well-marked indurated chancre on the frænum. It was still in its pustular condition, and I cauterized it with the sulphuric acid paste. The bichloride of mercury, in combination with the iodide of potassium, (a compound which I have generally found to possess very decided advantages,) was then administered. The chancre commenced to heal kindly, and no bubo appeared. After taking the above combination for a

little more than a month it was discontinued, the chancre having entirely cicatrized; and though it remained indurated during the whole process of healing, the induration became less and less, and when I saw him a few days since it had entirely disappeared.

I have also seen one case in which secondary symptoms manifested themselves, and in which there had never been a bubo. The chancre was situated upon the corona, and was seen very early after infection—on the fifth day. Induration was well marked. It was cauterized, and the patient placed at once under the influence of mercury. Secondary symptoms appeared during the sixth week. The chancre by this time had healed entirely, but there was no bubo.

These cases are certainly to be regarded as exceptions, and hardly invalidate the correctness of the law laid down by Ricord relative to the invariable attendance of the indurated bubo on the indurated chancre.

This form of bubo is doubtless to be regarded as of very great importance in diagnosing the character of a venereal sore, and I shall therefore mention now some of its more obvious characteristics, reserving the full consideration of it for another occasion.

The bubo consequent upon an indurated chancre is always seated in those glands which are in direct relation with the lymphatic vessels of the affected part; in this respect, therefore, being in no way different from the bubo due to the presence of a simple

non-infecting chancre. Thus if the chancre is seated on the hand, the glands immediately above the elbow are the seat of the bubo; if the chancre exists on the lips, the submaxillary lymphatic glands are affected; if the penis, the scrotum, or the labia are the seat of chancre, the buboes will be found in the superficial inguinal glands, and so on. Let us take for an example the inguinal bubo, as it is more frequently met with, for obvious reasons, than any other.

During the first week or at latest during the second week of the existence of an indurated chancre, the indurated bubo makes its appearance. From the first you have a valuable sign, by which it may be distinguished from any other form of bubo in this, that the enlargement is not limited to a single gland, as in the other species of bubo, but affects all the glands of the cluster to which the lymphatics of the chancrous region are distributed. The indurated glands feel as if they were bullets placed under the skin, being quite characteristic in this respect.

The indurated bubo never suppurates unless it is attacked with inflammation from some other cause, as cold, injury, etc. In such cases it never furnishes inoculable pus; and here we have two points of difference with the bubo resulting from the absorption of the pus of a soft chancre, which always suppurates, and which does furnish pus capable of causing a chancre of the same species as the parent ulcer.

These, gentlemen, are some of the chief symptoms

and concomitants of the infecting chancre. There are others, however, of still greater importance, which we will discuss in subsequent lectures, as also some other interesting points relative to the indurated bubo. In the foregoing remarks I have mainly considered those circumstances which are indicative of the presence of this form of chancre, and which consequently are of most importance to you in enabling you to arrive at an early and exact diagnosis.

LECTURE V.

INDURATION, ULCERATION, AND PHAGEDENA—BUBO WITHOUT CHANCER—TREATMENT OF INDURATED CHANCER—CASES IN WHICH MERCURY SHOULD NOT BE USED—INTERNAL REMEDIES.

THE last lecture was devoted to the consideration of the primary infecting ulcer, and its almost invariable attendant, the indurated bubo. We passed briefly in review the phenomena and diagnostic marks of these manifestations of syphilis, and I explained to you the nature of the relation which they have to each other. There were one or two points, however, which were passed over at that time, and to these, before proceeding to discuss the treatment of the indurated chancre or the constitutional troubles to which it gives rise, I wish to direct your attention.

I have said that induration is pathognomonic of the infecting chancre; so it is, but you know how necessary it is for you to be aware of all the circumstances attending the presence of a chancre before you form your diagnosis, and how careful you must be not to mistake medicinal hardness for specific induration. Now you are liable to still other errors.

First. The induration may have been present and have disappeared. This is a circumstance of fre-

quent occurrence. It is exceedingly rare for this sign to vanish before the cicatrization of the chancre; nevertheless, it does occasionally happen. Not long since a sailor applied to me with a chancre on the prepuce. He had noticed it eight days previously as a slight excoriation. There was well-marked induration, not of the parchment kind, but such as Hunter and Bell described. There was a small bubo in the groin of the corresponding side. It was indurated, but was so small that a cursory examination might readily have failed to reveal it. I prescribed bichloride of mercury and iodide of potassium internally, and a lotion of solution of tannin. In five days he again presented himself. I was surprised to find that the induration of the chancre had entirely disappeared, while the sore itself had not apparently decreased the least in size. Upon examining the groin I could detect no sign whatever of the bubo which was there five days before. The man's mouth was not at all affected by the mercury.

Had I seen this case then for the first time, I should not have hesitated to pronounce it one of soft chancre, for the other peculiar marks of the infecting chancre, though of value, are not so striking as to warrant us in regarding them as pathognomonic. The absence of the indurated base, and the indurated bubo, would have determined me. I should have made a mistake, but an unavoidable one, and

you are liable to meet with similar cases. They are so rare, however, as to form no argument against the rule that a soft chancre should not be treated with mercury.

You would do infinitely less mischief by treating all chancres with soft bases without mercury than by giving this agent indiscriminately, under the idea that some of the chancres may at some former time have had induration.

Second. A soft chancre may be contracted upon the indurated nodule that remains after an infecting chancre has been healed. The previous history of the patient's disease will prevent you making any error in such cases. You should, therefore, never fail to make such inquiries as will place you in possession of all pre-existing circumstances; as you have learned, a person never, as a rule, has an infecting chancre twice. Ricord never in all his immense experience met with such an example, and while, as I have stated to you, I am not prepared to contend for the absolute immunity claimed by Ricord, I have never seen an instance of the recurrence of an indurated chancre. But I have seen several cases in which soft chancres were developed upon an old induration. The infecting chancre gives no immunity from the soft chancre; in fact, I believe the latter are more apt to be developed upon the indurated cicatrices of the former than upon any other point. It is important to ascertain the exact circumstances

connected with all such cases, with a view to the employment of suitable treatment. The soft chancre on an old induration requires the treatment which I have mentioned to you as proper for it when seated elsewhere.

Third. An old induration is liable to spontaneous ulceration. This distinction I have often seen manifested. You have recently seen an example in the case of the man in St. Luke's ward, who was in the Infirmary last fall for an indurated chancre. He now has secondary symptoms, and the induration, which has persisted since the chancre was healed, (over eight months,) has lately ulcerated afresh. This ulceration under such circumstances is non-specific, there is no fresh infection from it, it is not in fact chancrous, and always, so far as my experience goes, heals under the mild use of the nitrate of silver.

You will recollect that I impressed upon you the pre-eminent liability of the soft chancre to certain accidental complications, as inflammation, ulceration, and phagedena. You are not, however, to suppose that the infecting chancre is altogether free from such attacks. Though not prone to inflammation, mechanical and medicinal irritation may give rise to it, and it may be attended with great engorgement and be followed by gangrene. The principles of treatment do not essentially vary from those laid down when we considered the same complication in

the soft chancre, except that superadded to our special remedial measures we have those which the infected system demands.

Ulceration to an excessive extent and phagedena are not so often met with. The latter is exceedingly rare. I have, however, seen several instances of it in New Mexico. Constitutional syphilis is not prevented when the chancre is thus affected. Ricord has, I think, established this point, and my experience leads to the same conclusion. It would be contrary to all analogy if the reverse was the case. The phagedena is nothing more than a local accident engrafted upon the local manifestation of syphilis. It can have no influence upon the constitutional infection any more than the curing the chancre will prevent or abolish consecutive disease. I saw this very distinctly shown about ten years since in a female who came under my charge having an indurated chancre on the right labium, and a bubo of the same character in the right groin. During the second week after the appearance of the ulcer it became affected with phagedena. The action was very extensive, and was not arrested till the upper half of the labium was almost entirely destroyed. Notwithstanding this, secondary symptoms ensued during the sixth week, and when I saw her some time afterward, the nasal bones and palate processes of the superior maxillary bones were nearly completely necrosed.

In one case, also that of a female, an indurated

chancre existed at the angle of the mouth. Phagedena ensued, and destroyed a large portion of the cheek through nearly its entire thickness. In a few weeks secondary symptoms appeared, and eventually venereal nodes on the tibia followed.

But if the infection of the individual is not prevented, the specific character of the chancre is destroyed very soon after the occurrence of phagedena. This fact I have had several opportunities of establishing, both by cases and experiments. In one instance especially, an individual who was under my charge, with an indurated and phagedenic chancre on the frænum, had daily connection for a considerable period with two women, neither of whom contracted any venereal disease. The individual in question had well-marked constitutional syphilis developed shortly afterward.

I have also endeavored to propagate the indurated phagedenic chancre by inoculation, but never with an affirmative result. The same attempt has been made by Fournier, with like unsuccessful results.

In the treatment of phagedenic ulceration of an indurated chancre, the measures to be employed do not differ from those proper for the same accident when engrafted on the soft chancre. Phagedena in the infecting chancre is not so extensive, however, or so difficult of cure, as when the soft chancre is implicated.

In regard to the indurated bubo, I have already

called your attention to the intimate relation which exists between it and the infecting chancre. It is, however, contended by some syphilographers that it may originate without necessarily being preceded by any other evidence of disease—that is, that the chancrous virus may be absorbed so as to reach the lymphatic glands without ulceration or suppuration being caused in the first instance. Although I have never seen any such example, I am not altogether prepared to deny its possibility, and I really see no reason, physiologically, why it should not take place. It must necessarily be rare, for we know with what difficulty, even under favorable circumstances, the absorption of substances takes place from surfaces not deprived of their epidermis or epithelium, and during coition sufficient time for such absorption is not afforded. That buboes of an indurated character may be formed without a chancre preceding, is simply shown by the fact that they so frequently ensue on a gonorrhœa. An example of this was in the house a short time since, and you had sufficient evidence to show that such was the case. In the instance referred to there was no doubt of the non-existence of a chancre, and yet we had an indurated bubo in the left groin, impetiginous eruption, and alopecia.

The *bubo d'emblé*, while not impossible, is therefore improbable, but we can readily imagine cases where it might occur, cases in which the infecting virus has remained a long time in contact with a sur-

face possessed of little local tendency to inflammation. This immunity is seen at times in instances of animals poisoned by the bite of the rattlesnake, where death ensues without any local disturbance, whereas generally the local irritation is very great.

Having thus brought under your notice some of the chief phenomena of the indurated chancre, we come in the next place to treat of its cure. I prefer to do this now before passing to the consideration of constitutional syphilis, which from its amplitude would separate us too much from the local affection.

Two indications are to be, if possible, fulfilled—1st. To prevent infection. 2d. To cure the local trouble. The first of these is infinitely of greater importance. The second, comparatively a small matter, for, as I have already told you, the infecting chancre is not, like the other varieties of venereal ulcer, characterized by much local irritation or tendency to the supervention of troublesome complications.

According to Ricord, if an infecting chancre is destroyed by escharotics within the first five days after contagion, infection is never produced; if this procedure is not practiced until after induration appears, it is useless—infection will certainly follow. In other words, he regards the induration of a chancre as giving positive evidence that infection has already taken place, and accordingly he never cauterizes a chancre when this specific sign is present. If, how-

ever, induration has not appeared, he destroys the specific character of the chancre, and converts it into a healthy non-infecting ulcer. Consequently his plan is to cauterize all soft chancres, and not to cauterize any indurated chancres. Now, as it is impossible to distinguish in its first stages, before induration is manifested, a simple from an infecting chancre, it is difficult to arrive at an exact estimate of the value of M. Ricord's method, for doubtless the great majority of the chancres thus destroyed would never have been followed by infection even if let alone. Nevertheless, so far as his practice relates to the early destruction of all chancres, there can be no doubt of its propriety; but that principle of his system which is opposed to the destruction of a chancre after induration has appeared, is, I am perfectly satisfied, calculated to lead in many instances to unfortunate results to the patient. In fact, the primary basis of M. Ricord's doctrine is, I think, wrong. Instead of regarding the induration of a chancre as the sign of infection already accomplished, it should be considered as the first manifestation of the infecting character of the ulcer. It is not due to the reaction of the absorbed virus upon the base of the chancre, as Ricord appears to believe, but it is the sign by which we know what we have to deal with—a part of the chancre itself, and the part which serves to distinguish it from anything else which affects mankind. The fact is that M. Ricord, notwithstanding

his tardy declaration of a belief in the duality of the virus, has not yet been able to divest himself of his earlier formed doctrines. Certainly if he believes that induration is the evidence that the system is infected, he can scarcely believe in the duality of the poison, for in that case the induration is not an attribute of any one kind of chancre, but only an evidence that the virus of the ulcer to which it is super-added has been absorbed into the system. M. Ricord vacillates in regard to this point.

Now, as I have told you, I believe that induration is peculiar to one kind of chancre, that this species always has it, and I am further convinced that its appearance is no evidence that infection has taken place. Therefore, in the first stages of an indurated chancre I should certainly destroy it with the carbosulphuric acid paste or bromine, and I am convinced from ample experience that in many cases infection would be thereby avoided. The indurated bubo would not be prevented, for I believe that the specific action which causes the induration of a chancre is simultaneously set up in the lymphatic glands; but then I do not claim that an indurated bubo is necessarily followed by constitutional syphilis if proper remedial measures be adopted.

According to my experience, the caustic plan of treatment of the indurated chancre may be practiced with a reasonable prospect of success, if employed within the first six days after the appearance of the

pustule, whether induration be present or not. If used subsequently to this period on a chancre of the infecting kind, it will generally prove unsuccessful of itself in preventing infection, even if induration has not yet made its appearance.

Some surgeons cauterize the indurated chancre at any time of its progress, on the grounds that the rise of other chancres is thereby prevented, and that contagion is no longer possible. The first of these, we have seen, is not to be considered, for we know that the liability to the propagation of fresh chancres on the affected individual does not exist. The second is only valid during the progress of the chancre. When its further advance is arrested, it is, as has been definitely ascertained, no longer contagious: previous to this stage, ordinary precautions can readily be taken in the cases of most individuals. When, however, the patient is of such a character as to be devoid of scruples on the subject of communicating his disease to others, it is proper to cauterize his chancre on strictly moral principles, so as to prevent, as far as possible, the further spread of this loathsome affection.

After cauterization, the most simple applications are all that are necessary. Ricord and other French surgeons use the aromatic wine, a vinous tincture of some thirty aromatic herbs. This acts very well; there is nothing, however, specific in its properties, and I have always found a solution of tannin to be

equally efficacious, or, what is still better, a weak solution of permanganate of potash. The strength of this should not exceed two grains to the ounce of water. Should the chancre be healing, or even if it has ceased to progress, as I have told you, cauterization is unnecessary, nay more, exceedingly improper. In such cases commence the local treatment with the solution of tannin above mentioned. You will obtain from this all that it is possible to get from local medication, which, with the exception of the cauterization in cases that require it, accomplishes more on account of its detergent action than by any direct effect upon the chancre.

In regard to the local application of mercurial remedies, such as the black wash, the yellow wash, mercurial ointment, red precipitate ointment, calomel, etc., I have nothing to say in laudation; chancres get well under their use, or rather in spite of them—as they generally do under any treatment which has ever been recommended. Indurated chancre especially is a self-limited ulcer, even if let alone from the commencement. Unless it is destroyed by escharotics, or attacked by phagedena, or other complication, it runs a regular course, and is healed spontaneously in four or five weeks.

An indurated chancre attacked by inflammation or phagedena requires the same general treatment, which has been recommended for the soft variety. Should phagedenic ulcerations occur, all mercurial

remedies should be at once stopped, and the tonic course of treatment commenced. Nothing so greatly tends to the spread of phagedena as mercury; and I am anxious to impress on your minds, in the strongest way, the great harm you will do if you administer this agent when such a complication exists. Mercury is a destructive; under its use the tissues melt away without any other influence being brought to bear. You know, from what you have seen in this house and from what has been told you, that mercury renders the blood thin and watery, that it lessens the vitality of the tissues, and, consequently, promotes their absorption. Thus we see the countenance become pale and exsanguined, the gums spongy and ulcerated, and any disease due to constitutional vice, (with the single exception of syphilis,) such as cancer, scurvy, or scrofula, is aggravated. Phagedena is always due to a failure in the powers of life and depravation of the blood. It has nothing to do with the syphilitic poison, for, as we have seen, it is more commonly an attendant on the soft chancre than on the indurated species, and consequently mercury cannot cure it by its antisiphilitic virtues. As I have said, however, it is rare that the indurated chancre is attacked with phagedena, but when it is, take care that you suspend the administration of all mercurial remedies.

In regard to the efficacy of internal remedies in accelerating the cure of the chancre, I have very

strong doubts. Do not misunderstand me. As we shall see hereafter, constitutional treatment, with the view of preventing infection or destroying the morbid matter circulating in the blood, and contaminating the tissues, is eminently proper and necessary; but that such treatment exercises any effect over the chancre, I hardly believe. We know that indurated chancres are healed just as soon without mercury as with it. Under the influence of this agent, however, the induration of a chancre certainly does disappear sooner than if no mercury is given, but the ulcer is just as long in healing.

But with the view of preventing infection much may be done; and to the consideration of this and other subjects of importance, I propose to devote the next lecture.

LECTURE VI.

FURTHER REMARKS ON THE DUALITY OF THE VENEREAL POISON—IMPORTANCE OF THE DISTINCTION BEING MADE—DISCOVERIES OF MM. BASSEREAU AND FOURNIER—OBJECTIONS OF M. ROBERT—POSSIBILITY OF PREVENTING CONSTITUTIONAL INFECTION—REASONS WHY THIS POSSIBILITY SHOULD EXIST—INFLUENCE OF MERCURY IN PREVENTING CONSTITUTIONAL DISEASE—EARLY DESTRUCTION OF THE CHANCRE ALSO NECESSARY—INDURATION NOT A SIGN OF CONSTITUTIONAL INFECTION—LENGTH OF TIME MERCURY SHOULD BE USED—NOT TO BE EMPLOYED UNLESS POSITIVE EVIDENCE EXISTS THAT THE CHANCRE IS OF THE INFECTING KIND.

HAVING now pointed out to you briefly, but I trust with sufficient perspicuity, the phenomena which belong to the two species of venereal ulcers, their deviations from a normal course, and their immediate accompaniments, I desire to bring before you in as clear and succinct a manner as possible the facts which show that the opinion for a long time held, and which is not even yet eradicated, that all primary venereal sores are referable to one species, is absolutely untenable. I want you to understand distinctly that if this opinion is practically carried out, the results will be deplorable to the patient and discreditable to the surgeon.

Upon the fact of the thorough distinctness of the morbid matters which give rise to soft and indurated chancres depends the system of treatment to be

adopted. It is the foundation of venereal therapeutics, and unless it is clearly recognized, the first steps taken toward effecting a cure will be so many gropings in the dark. There is absolutely nothing in common between the two forms of venereal ulcers, except the fact that both originate from sexual congress, and it would be just as philosophical to assert the identity of scarlet fever and small-pox, because both are diseases of the skin and are produced by atmospheric contagion, as to assume the sameness of indurated and non-indurated chancres.

At the risk therefore of repeating some things which have been stated in the previous lectures, I shall devote a part of what I have to say this morning to the question of the duality of the venereal poison.

In 1852 M. Bassereau, a pupil of M. Ricord, announced, as the result of his observations and experiments, that an indurated chancre could only be produced by natural or artificial inoculation with the virus of a chancre of like character. Several years subsequently M. Fournier, another pupil of Ricord, determined that the indurated chancre was incapable of reinoculation on the same individual. Other discoveries were made, adherents came from every quarter, and in the first lecture of his course, at the Hôpital du Midi, in 1856, M. Ricord declared himself a convert to the new doctrines. At present few syphilographers of eminence contend for the unity of the venereal poison. The characteristics are so distinct,

as exhibited by each species, that conviction has been carried to the minds of most of those who have made venereal diseases the subject of their special study. These characteristics have been already pointed out to you in detail, and I do not therefore propose to dwell upon them at greater length. It will be sufficient for our present purpose if you are made acquainted with the main points of the two theories.

The unitists hold that both the soft and the indurated chancre are produced by a single virus, and while admitting that syphilis only ensues on an indurated chancre, they hold that this is not due to any peculiarity in the virus, but to some specific condition of the organism which produces induration in the sore and infection of the system. M. Robert,* who is certainly the most distinguished advocate of this view, enunciates the following conclusions:—

“1st. The infecting chancre ordinarily originates from an infecting chancre.

“2d. The virus of an infecting chancre inoculated on an individual affected with syphilis produces a soft chancre.

“3d. The virus of an infecting chancre occasionally produces a soft chancre in a healthy individual, in virtue of conditions which it is often impossible to determine.

“4th. The simple chancre depends essentially on

* *Nouveau Traité de Maladies Vénériens*. Paris, 1861, p. 312.

the infecting chancre, and results: First, from the inoculation of the virus of an infecting chancre on a syphilitic individual; second, from the inoculation of a healthy individual with the virus of an infecting chancre at its period of decline; third, from the inoculation of an individual possessed of a natural immunity to syphilis with the virus of an infecting chancre.

"5th. The simple chancre is capable of being transmitted, with its pathological characteristics, during a period varying according to individual peculiarities and the place of inoculation; but the conditions and the place being favorable, it recovers the property of infection and comports itself like an indurated chancre. In other terms, the infecting property is not peculiar to the indurated chancre.

"6th. There is no positive evidence to show that chancroid,* or simple chancre with suppurating bubo, have a distinct origin. The simple chancre is the chancroid, and *vice versa*.

"7th. The indurated chancre, the chancroid, and the simple chancre are, therefore, pathological manifestations of the same principle, the effects of which vary, depending less upon the inherent properties of the virus than on the conditions of the organism.

"8th. There is then but one virus."

* By chaneroid is meant the ulcer which results from the inoculation of the virus of an infecting chancre on an infected individual.

In the foregoing extract I have given you in full the conclusions arrived at by the most eminent contestant for the unity of the venereal virus. If the first seven are true, there is no doubt of the correctness of the dogma enunciated in the last sentence, that "there is but one virus." These conclusions are based upon thirty-one "results," which have been derived, as M. Robert tells us, from clinical and experimental experience, the details of which he does not state.

The views enunciated above are so directly at variance with those held by the dualists as being also based upon clinical observations and experiments, that it is impossible to account for the difference except upon the presumption that very serious errors have existed somewhere. It is impossible that both parties have in every case witnessed the same disease or experimented with the same virus. Why should M. Robert be enabled to inoculate a syphilitic individual with the virus of his own chancre, and MM. Basse-reau, Fournier, H. Lee, and others who have tried the same thing hundreds of times, succeed so very seldom as to lead us to the conclusion that success was due to an error somewhere? Why should M. Robert be able to inoculate the soft chancre on the head and face, and the dualists be unable to do it? Why should the indurated chancre in his experience be followed by suppurating bubo, and this not be the case in the practice of MM. Ricord, Diday, and others who

hold different views? We cannot reconcile these diverse results except upon the hypothesis before stated.

But nothing can be so satisfactory to us as our own experiments and observations. You have seen me time and again endeavor to inoculate the virus of an indurated chancre upon the infected individual, and fail invariably, not only after one attempt but after several trials. You have seen in these wards many cases of indurated chancre with indurated bubo, but you never saw such buboes in a suppurating condition. You have seen several cases of cephalic chancre, and all have been followed by constitutional infection. I invite you to make use of your opportunities to study this point. The more attention you give to the matter, the more you will become convinced of the absolute non-identity of the virus of an indurated chancre with that which gives rise to a soft ulcer.

The conclusions of M. Robert are not therefore, with the exception of the first, borne out by my experience, and even in this the expression "ordinarily" should be changed to "invariably."

Is it possible, after an individual has become inoculated with the virus of an infecting ulcer, to prevent constitutional syphilis? I think it is, although in this opinion I differ with several distinguished syphilographers, and it is therefore proper, out of regard for them, in justice to myself, and with the view to

your instruction, that I should consider this important point with sufficient fullness.

The infecting chancre, as we have seen, occurs sometimes at a very early period after exposure, and induration may likewise make its appearance either synchronously with the occurrence of the chancre, as in the case cited at page 66, or a very short time after contagion. You have therefore in many cases, during the first stage of the disease, a guide by which you may form a correct diagnosis. You of course understand that induration is not, in my opinion, an evidence of constitutional infection, but an indication of the character of the ulcer we have to deal with, and giving an emphatic warning that contamination of the system will inevitably result if the chancre is left undisturbed to take its course.

Now, in those cases in which the induration of the chancre appears early in the course of the disease, you will generally find that the indurated bubo is also accelerated in the time of its occurrence, and hence you have another evidence of the character of the sore under your notice. In addition, the microscopical characteristics are sufficient to enable you to form an opinion from the very earliest stage of the ulcers. These circumstances are not to guide you in your local treatment of the ulcer,—for, as I have already told you, it is proper to destroy *all* chancres, hard and soft, within the first six days after the ulcer appears,—but they will serve as valuable indications

of the constitutional measures you are to adopt, and you should not fail therefore to seek for their presence or absence.

We know from experience that there are antidotes to animal poisons. Thus, ammonia neutralizes the venom of the bee, wasp, and other insects, and is supposed, upon good evidence, to be efficacious in cases of serpent bites, as are also iodine and bromine. I believe mercury, properly administered, is as antagonistic to the syphilitic poison as cinchona is to intermittent fever. I do not intend to be understood as saying that syphilis cannot be cured without mercury, any more than I would say that intermittent fever cannot be cured without cinchona or some of its preparations. On the contrary, I hold directly the opposite view, and I believe that mercury, as it is often used in the treatment of or as a prophylactic to syphilis, does much more harm than good. But I am, nevertheless, equally sure that when properly employed, with due care to avoid their injurious effects, we have—besides destroying the chancre—in the preparations of mercury the only prophylactics against constitutional syphilis, and the best agents we can use in its cure.

In order therefore to prevent the syphilitic infection of the system from the virus of an indurated chancre—and no other can produce this result—two measures are necessary: First, to destroy the chancre with some powerful caustic, as the carbo-sulphuric acid paste, monohydrated nitric acid or bromine; and

second, to bring the system under the influence of mercury. The first should be done within six days after the appearance of the chancre, and the second commenced at the same time and carried out as rapidly as possible consistent with thoroughness. Even with all due diligence you will sometimes fail in your endeavors, but you will often succeed. I have never, however, seen constitutional infection prevented unless the chancre was destroyed within six days after its commencement, nor unless the system was well under the influence of mercury before the fifteenth day.

Mercury conjoined with iodine certainly appears to be more efficacious in preventing constitutional disease than when administered singly. I have for several years been in the habit of using corrosive sublimate, dissolved in a solution of iodide of potassium, in preference to any other form. The following formula will be found generally eligible, the amount of mercury being increased or diminished according to circumstances :—

℞.—Potass. iodidi, ʒi;
Hyd. bichloridi, grs. vi;
Aquæ, ʒxij.

Of this mixture a teaspoonful may be taken three times a day, till the system is well under its influence.

The corrosive sublimate is converted into the biniodide of mercury, and this is dissolved in the excess

of iodide of potassium. The mercury is thus retained in a fluid form, and is conveyed more effectually, than by any other means with which I am acquainted, to all parts of the system. Moreover, it does not readily produce those frightful manifestations of hydrargysm which are so liable to be the result of the long-continued administration of the drug in other forms, for, with the exception of the mercurial odor of the breath, no evidence of the presence of the mineral in the blood is ordinarily perceived.

As I have said, you will sometimes fail in your efforts to prevent infection of the system by the syphilitic poison, no matter how prompt you may have been in your treatment. The cases in which success may be looked for with most confidence are those in which the appearance of the chancre has been delayed beyond the average period. In such instances it would seem that the virus is not of the highest degree of intensity. On the contrary, when the chancre occurs soon after exposure, other things being equal, it would appear to indicate greater virulence in the syphilitic matter. In such cases you are less likely to be successful in the use of prophylactic measures, for the poison will have got the start of you in many instances before you are made acquainted with its nature.

You will perceive, from the remarks which have been made to you on this subject, that if you regard the induration of a chancre as the first sign of consti-

tutional infection instead of an essential characteristic of a distinct species of venereal ulcer, it will be extremely illogical for you to undertake any abortive measures. You might as well attempt to prevent small-pox after the pustules have appeared. If, on the contrary, you regard the induration as a something which informs you of the nature of the ulcer, it is your duty to use such means as experience may have suggested to be efficacious in obviating the occurrence of extensive disease.

It is thought by those who deny the existence of prophylactic means against constitutional disease after the appearance of an indurated chancre, that the virus is absorbed at once and enters into the system. The chancre then must be formed not by any local influence of the virus but from the reaction of the poison circulating in the blood. If such is the fact, it is difficult to see why there should be any chancre at all, or at any rate why it should always occur at the exact seat of inoculation. According to this theory, if an individual should be inoculated with the virus of an infecting chancre, and the inoculated part were immediately cut out, constitutional syphilis would still follow, and a chancre would be produced at the point of inoculation. Although they deny this, it is a logical sequence of the theory.

It appears to me that this hypothesis is not sustained by facts. It seems much more in accordance with physiology and experience to adopt the view,

that the virus first produces a chancre, and that from this chancre constitutional infection takes place. We find a parity of action in vaccination. We do not hear of the vaccine virus being immediately absorbed so as to affect the constitution, and that from this constitutional action a pustule is produced; but, on the contrary, all admit that unless a pustule is formed, there can be no systemic effect.

Any violence committed on the pustule, such as depriving it of its contents, or rubbing or scratching it, interferes with its regular progress and lessens the probability of constitutional infection. There is no doubt that if the vaccine pustule were cauterized during the first three or four days of its course, no general effect would ensue.

Now, in the infecting chancre I think we have a similar chain of occurrences. The virus comes in contact with the glans penis, an indurated chancre is produced, and from this chancre the system becomes contaminated.

M. Ricord believes that mercury has the effect, if administered in the early stages of a chancre, of *retarding* the constitutional affection, and M. Fournier asserts that *secondary* symptoms may be thereby entirely prevented, without any effect being produced, on the occurrence of *tertiary* manifestations. Even if the influence extended no further than these points, it would still be proper to mercurialize the patient at as early a period as possible; but I am satisfied, as I

have already told you, that the influence of mercury extends to the point of entirely preventing all constitutional disease.

As a rule, an infecting chancre, if allowed to take its course, produces systemic disease within six months. Ricord asserts, with great positiveness, that in the climate of Paris an individual who is the subject of an infecting chancre will, if subjected to no treatment, invariably be so affected within the time above stated, and experience has satisfied me that this limit is seldom if ever exceeded in the United States.

Now, I have repeatedly administered mercury after destroying an indurated chancre, with the view of preventing infection, and have had the patients under my observation for over three years, without any constitutional symptoms being produced. I have heard from many of these individuals at periods of several years subsequently, and they have remained in good health. Such facts are sufficient to satisfy me. You will please notice that I do not refer to cases of infecting chancre in which induration had not yet appeared, but to those in which it was present within six days after the commencement of the chancres.

Relative to the length of time during which the mercurial influence is to be kept up, you should be careful not to stop too soon. After the system is thoroughly affected, it will generally be sufficient to

administer the prescription before mentioned but once a day, or perhaps no oftener than once in two days. As a rule, the patient should continue under the mild influence of the medicine for at least five months. I do not think it safe to leave it off in less time. It is not necessary to produce salivation, indeed you will find it difficult to do so with the preparation recommended, but the breath should, during the period mentioned, give constant evidence of the mercurialism of the system.

But remember that though you should destroy *all* chancres within six days after their appearance, you are not to administer mercury till you have ascertained, by indubitable evidence, that the sore is of the infecting species. Besides the induration of the base and the occurrence of the indurated bubo, which may not be present at a very early period, you have such evidence in the microscopical appearances previously referred to. The differences between the soft chancre and one that will become indurated are to be perceived by the microscope from the very first inception of the ulcers, and you should never neglect to employ this instrument in the examinations you may have to make relative to this point. Induration both of the chancre and of the inguinal glands may be delayed, but the histological characteristics exist from the beginning.

LECTURE VII.

MODE OF ABSORPTION OF SYPHILITIC VIRUS—REACHES THE GENERAL SYSTEM THROUGH THE VEINS—ORDINARY COURSE OF SYPHILIS—SYPHILITIC FEVER—MICROSCOPICAL CHARACTER OF THE BLOOD IN CASES OF SYPHILIS.

IN the present lecture I propose to bring before you some of the more important phenomena connected with the inception of constitutional syphilis—that condition of the system which results from the circulation in the blood of virus derived from an infecting chancre.

How does the syphilitic poison reach the system? You know that there are two classes of absorbents, the lymphatics and the veins. By which of these is the venereal virus taken up? Hunter thought from his experiments that the lymphatics were the only absorbents, and he taught this view in his work on Venereal Diseases, as applicable to the syphilitic poison. Such, however, is not the case. Hunter's experiments were badly conceived. We know, from the most indubitable proof, that the veins absorb with much more rapidity than the lymphatics. Magendie settled this point conclusively when he divided all the structures of the leg of a dog, connected the cut extremities of the artery and vein by quills, and

then inserted poison into the tissues of the amputated extremity. The animal died in three or four minutes. Here the poison could not by any possibility have reached the general circulation except through the vein. You have seen me again and again repeat this experiment, variously modified, in my lectures on physiology. We may therefore consider it as admitting of no doubt that one way at least by which the syphilitic virus infects the system is by the blood-vessels.

The genital organs of the male and female are well provided with lymphatics, and we know that the virus of a chancre passes along them to the lymphatic glands. We see the vessels red and inflamed, and the patient experiences pain along their course. But we never see it pass beyond the first chain of glands. When it reaches these, its further progress is arrested. The lymphatic vessels leading from them are never inflamed, neither do the glands of the second or deep seated row ever become diseased. If we take any portion of the indurated gland, such as can be obtained by an exploring needle, and endeavor to produce a chancre by inoculation with it, we never succeed. On the contrary, the pus of a bubo resulting from a soft chancre, when inoculated with proper care, almost invariably causes a non-indurated chancre. We judge from these facts that the lymphatic glands not only prevent the passage of the chancrous virus into the blood, but that they deprive the virus

of the indurated chancre of its specific properties. From the evidence which we have upon this subject, we are fully warranted in concluding that the virus of an infecting chancre is absorbed into the system through the blood-vessels of the part involved in the primary ulcer, and by no other channels.*

There are many cases now in the house which illustrate the different stages of constitutional syphilis, and which have frequently been brought under your notice. In order, however, that you may understand the whole course of the morbid action as it affects an individual when left to itself, I propose to describe the phenomena which occur during the progress of the disease to its termination, taking for this purpose a case in which the symptoms are all well marked, and in which the virus may be supposed to possess its full degree of virulence. The several characteristics will hereafter be more particularly brought before you.

Within a period—varying, according to the constitution of the patient, his mode of life, and other circumstances—of from four weeks to six months after the appearance of an indurated chancre, the system begins to exhibit evidences of infection. The chancre has perhaps healed, and the inguinal glands may have returned to an apparently healthy condition, when slight febrile symptoms are developed. There is a general feeling of *malaise*; the digestion is disturbed; the nervous system either gives evidence of

excessive irritability, or there is languor, and indifference to passing events. The interference with the nervous system is further shown by the supervention of neuralgia, which most generally attacks the head and face, particularly the supra-orbital nerve and its branches, but which is also met with at times in other parts of the body. With the condition of system giving rise to these symptoms the circulation participates. The pulse is frequent and irritable; the skin dry and hot; and the eyes suffused, and painful upon motion.

Among the prominent symptoms of the constitutional infection which occur at an early stage, congestion, dryness, and pain of the fauces are especially to be noticed. The patient frequently makes more complaint on this account than any other; in fact, it may be the first and the only indication which he perceives for several weeks that any systemic disturbance is going on.

This syphilitic fever, as it is called, lasts but a few days, rarely more than ten, and then the system becomes more tranquil; very soon, however, unmistakable symptoms of blood poisoning begin to manifest themselves.

First among these is the enlargement of the post-cervical lymphatic glands, which, though not generally perceived by the patient till his attention is directed to it, constitutes a valuable sign by which we are enabled to form an opinion as to the contamina-

tion of the system. Indeed, it frequently is the first symptom of constitutional infection. You should always therefore examine the regions immediately below the occiput and behind the mastoid processes, in order to enlighten yourselves relative to the state of the glands which are there situated. In case they have become affected, you will discover them immediately beneath the skin, feeling very much like small bullets. They remain in an indurated and indolent condition, never suppurating or increasing much in size.

Alopecia is often met with at an early period of the disease, and is one of the first evidences of that determination of the syphilitic poison to the skin and appendages, which in the primary stages of its action is so prominently shown. Very soon this tendency becomes more strongly marked; the skin is covered with characteristic eruptions; the mucous membranes of the digestive and air passages participate in the morbid action, and the system is fairly under the influence of the syphilitic virus. This stage is that which Ricord designates the secondary. The poison is in a measure limited in its action to the skin, the mucous membranes, and their appendages.

After awhile, rarely before the sixth month, other tissues of the body exhibit evidences of the morbid process which has been set up in the system. Tumors are formed in the skin, cellular tissues, and muscles, which soften and ulcerate; the internal viscera may be the seats of similar deposits; the mucous mem-

brane becomes ulcerated, and the bones and periosteum likewise become involved. Periostitis, caries, and necrosis follow; and the life of the patient is made a burden to him, which he would gladly in many cases get rid of.

There is probably no tissue or organ of the body which is exempt from the attacks of syphilis, but it rarely happens that the life of the patient is sufficiently prolonged for many of the more important viscera to become seriously involved. Death finally steps in to his release, but not till the unhappy victim has been made to pay the full penalty for his indiscretions.

Such is a mere outline of some of the more prominent circumstances attendant on the infection of the system with the virus of syphilis. It is of course my intention to bring all these and also others more particularly to your notice, when we shall be enabled to study them with precision, and to adopt such means for their treatment as science may dictate.

Before we separate, however, for the morning, I wish to call your attention to the microscopical examination of the blood of patients affected with constitutional syphilis. Unfortunately the virus itself is of such a character in common with other animal poisons, that it is undistinguishable by any means, chemical or microscopical, with which we are acquainted, and probably will remain so to the end of time. But we are not altogether in the dark, for

though the virus cannot be perceived, we have already seen how valuable the microscope is to us in our examination of the secretion of chancres, and that by its use we are enabled to discriminate between the two forms of venereal ulcers. We shall see that in constitutional syphilis the effect of the syphilitic poison upon the blood is such as to produce a change in its morphological constituents, and thereby to afford us a valuable means of diagnosis.

We have seen that syphilis has a special predilection to attack the lymphatic glands. Those of the first row, situated in the groin, are primarily affected by the direct action of the virus absorbed by the lymphatic vessels from the chancre; those of the post-cervical region and other parts of the body become contaminated through the blood. Now as you have already been told, in the lectures on physiology which you have heard, there is a strong probability that the chief if not the only function of the lymphatic and ductless glands, as the spleen, thyroid, thymus, and supra-renal capsules, is intimately connected with the formation of the red and white blood-corpuscles. Any diseased condition of the glands referred to would of necessity interfere with their function. In constitutional syphilis this condition exists.

Several years since Ricord, in his *Letters on Syphilis*, mentioned the fact that he had detected in individuals suffering from syphilis a diminution of the red blood-corpuscles. This condition has since been

verified by other observers, and is admitted by Virchow in his little book on Constitutional Syphilis. Ricord attributed the circumstance to the direct action of the syphilitic virus on the blood, but it is more probably due to the diseased condition so generally induced in the lymphatic glands, spleen, and other similar organs.

You have only to take a very small drop of the blood of an infected person, place it on a glass slide, dry it rapidly by moving it swiftly in the air, and then, covering it with a piece of thin glass, look at it through a quarter of an inch objective. The appearance presented is that shown in the drawing, (Fig. 4,) and when comparing it with that representing healthy blood, (Fig. 5,) the difference is very strikingly seen.

Fig. 4.

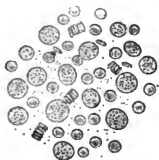


Fig. 5.



In order, however, that you may have a still better idea of the subject, I have prepared two specimens, one of healthy blood and the other of the blood of a syphilitic patient now in the house, who is only beginning to show that his system is diseased, which are arranged for microscopical examination, and which

you are requested to study till you have thoroughly appreciated the difference which exists.

It is very rarely the case that this condition of the blood is not present during the whole course of constitutional syphilis. But, in my experience, it does not stop there: not only are the red corpuscles diminished in number, but the white are increased. You will perceive that such is the case in the specimen before you. The condition therefore is not unlike (so far at least as appearances go) that which Bennett has described as leucocythemia, and probably depends upon a similar condition of the spleen and lymphatic glands, resulting, however, from a different cause. At any rate, we know that the spleen and other viscera of individuals suffering from syphilis are prone to lardaceous and amyloid degeneration, and that such conditions are altogether incompatible with the complete discharge of their functions.

In the next lecture we shall consider in detail the several phenomena which belong to constitutional syphilis.

LECTURE VIII.

SECONDARY AND TERTIARY SYPHILIS—RICORD'S VIEWS—OBJECTIONS TO HIS DOCTRINE—SYPHILITIC FEVER—HEADACHE—PAIN IN BONES—NEURALGIA—MUSCULAR PAINS—CLASSIFICATION OF SYPHILITIC SKIN DISEASES—ROSEOLA OR ERYTHEMA—SORE-THROAT—ALOPECIA—CERVICAL ENGORGEMENT—COLOR OF ERUPTION ALONE OF LITTLE VALUE AS A DIAGNOSTIC SIGN—LOSS OF SENSIBILITY OF THE SKIN—USE OF THE ÆSTHESIMETER.

THE division of the phenomena of constitutional syphilis into two stages was made many years since, but has been more insisted upon by Ricord and his followers than by any former writer. Undoubtedly this great syphilographer has conferred a service upon science in pointing out the various manifestations of the syphilitic infection as they come on in regular chronological order; but his division cannot be made in practice, for there are no well-defined boundaries between the two stages which he describes; neither is the virus so changed in the tertiary stage as to be incapable of being inoculated, nor so worn out as no longer to possess the power of being hereditarily transmitted.

As you will find constant references in your books to what are called secondary and tertiary syphilis, it will be well for me to describe to you briefly the

two stages of the disease as they are recognized by Ricord.

According to this author, the secondary phenomena are limited to the skin, the mucous membranes and their appendages, and occur before the sixth month of infection. They consist of cutaneous eruptions, inflammations, mucous patches, condylomata, ulcerations, alopecia, onyxia, iritis, engorgement of the lymphatic glands, especially of those situated in the post-cervical region. They are contagious, capable of being inoculated upon healthy individuals, and transmitted from parent to offspring, giving rise in the latter case to true syphilitic disease.

The tertiary accidents rarely supervene before the sixth month. They show themselves in the subcutaneous or submucous cellular tissue and muscles, as gummy tumors; in the bones and fibrous tissues, as caries, nodes, periostitis, etc.; in the testicles, brain, heart, liver, and other viscera. They are not contagious, are not inoculable, and not transmissible hereditarily in any syphilitic form, though individuals suffering from them may beget children with a predisposition to the scrofulous diathesis.

In general terms, therefore, Ricord assigns the secondary accidents to the superficial structures, and the tertiary to those which are deep seated. But, in reality, we often meet with the earlier symptoms of constitutional syphilis in the deep-seated tissues, and the latter in those which are superficial. Thus, one of

the earliest manifestations is pain in the bones, evidently the first indication of organic disease. The skin and mucous membranes are oftentimes the seat of morbid actions at a late period, in parts which were not attacked in the first stage; and the testicle and other glands are frequently affected during the period assigned to the secondary stage.

Neither is there any such modification of the syphilitic virus, during the so-called tertiary period, as that contended for by Ricord. There is no doubt, as we shall see hereafter, that the later syphilitic symptoms are both contagious and hereditary. No one, so far as I know, has tried to inoculate them on non-affected persons. Such experiments would, in my opinion, be altogether unjustifiable, fully as much so as those which have been performed in France and Germany, with the view of showing the inoculability of secondary accidents, and which were the means of converting Ricord from the doctrine of their non-inoculability, which he had previously held. But till experiments are performed with reference to this point, no one has a right to assert a positive opinion on the subject. Judging, however, from the fact of their contagiousness, we might also infer the inoculability of tertiary accidents. While, therefore, we cannot admit a well-defined separation of the symptoms of constitutional syphilis into two distinct stages, there is no doubt that a chronological sequence of its accidents exists, and, so long as we are not misled by the terms sec-

ondary and tertiary, by taking them for more than they are worth, we will find it convenient to employ them.

I propose now to bring before you, in as nearly as possible the order of their occurrence, the more important manifestations of constitutional syphilis, and to illustrate my remarks, as far as practicable, by actual cases of disease.

Syphilitic Fever.—Previous to the appearance of any obvious symptom of constitutional infection, the system, in the great majority of cases, gives evidence of febrile excitement. I say great majority—but, though it has not been recognized in all instances, the probability is that it always precedes syphilitic cutaneous eruptions, or any other symptom except engorgement of the post-cervical glands. Basse-reau noticed it in 143 of 199 cases of syphilitic roseola. Hunter described it accurately many years since. Bumstead has generally met with it, and I have nearly always been able to recall it to the patient's recollection. It is not often that you will be consulted for this symptom; and even when you are, unless you are very precise in your inquiries or have your suspicions aroused, you will sometimes fail to recognize it. Frequently, however, it is so well marked as to be noticeable not only by the patient, but by those around him.

In addition to the acceleration of pulse, dryness of the skin, and derangement of the digestive system,

which indicate the disturbance of the organism, the patient is affected with gloomy forebodings of ill, for which he cannot account. He is indisposed to any mental or physical exertion, neglects his business, and is disturbed at night with unpleasant dreams, the recollection of which he cannot entirely shake off after awaking. These evidences of a deranged state of the brain and nervous system are not due to remorse or any anticipations of evil results from having acquired syphilis. I have seen them in persons who were ignorant that they had ever had a primary sore; and even with this knowledge, it is not often that patients are aware of any connection between such a sore and the condition of system under consideration. Several years ago I had under my care a lady who had become infected from her husband. I had no suspicion of the cause of the intense melancholy, bordering on insanity, with which she suddenly became affected. A disposition to suicide was strongly marked, and it became necessary to watch her very closely. As she had previously been of a cheerful disposition, and in good health, I was about recommending her removal to an insane asylum, when an eruption, in regard to the character of which there could be no doubt, appeared on the skin. I had a free conversation with the husband, and obtained his admission that he had had a chancre six months previously, and was then suffering from secondary disease. He declared, however, that he

had abstained from sexual intercourse with his wife till the sore was healed. This, of course, was not true. On making an examination of the lady, I found engorgement of the post-cervical glands and an indurated bubo, and ascertained that she had had a vaginal discharge a month before. No chancre, however, existed at the time of my examination. She went on from bad to worse, and eventually died from syphilitic disease.

Headache is a frequent accompaniment, and is often the most characteristic symptom. It is due, not to any cerebral disturbance, but to commencing disease of the periosteum. It is usually more severe at night than through the day, and is generally attended with facial neuralgia. The neuralgic pain and that arising from incipient periosteal disease differ in their character—the first being lancinating, and not confined to any one spot; while the latter is generally limited to the frontal region, and is of a dull, aching nature.

Besides those of the cranium, other bones are similarly affected, especially those of the upper and lower extremities, at or in the neighborhood of the articulations. These pains are often mistaken for rheumatism, though the least attention to their character will enable you to discriminate between the two affections. They are, like the headache, worse at night, not because, as some authors suppose, the body is then covered up warm in bed, but simply because it is a part of their identity to be so. We know that these

nightly exacerbations are met with in other diseases. Occasionally the parts are very much swollen and inflamed, and there is always tenderness on pressure. I think the bones of the upper extremities are more frequently affected at this period than those of the lower. At a later period the reverse is the case. The joints, even when free from pain, are often stiff, especially when the limb has been at rest for some time. Exercise usually causes this symptom to disappear for a time, to return again when rest is resumed.

Neuralgia is, as has been said, generally met with in the parts supplied by the infra-orbital and other branches of the fifth pair of nerves; but it is by no means confined to those regions, frequently attacking the nerves distributed to the trunk, limbs, and viscera.

It would be inexact to class all the wandering pains which occur during this period of syphilis as neuralgic. Many of them are muscular, and are due, not to any nervous disease, though of course felt through the nerves. Of this character are the dull, aching pains which are so often experienced in the shoulders, loins, and intercostal region, and which, like those attacking the periosteum, are aggravated during the night. I have had many cases of these syphilitic muscular pains come under my observation, and you have seen several within the last few days in the house. It is the almost invariable custom to

call them neuralgic or rheumatic, but they have nothing in common with these diseases. Dr. Inman,* who, however, does not refer to muscular pains as depending on a syphilitic taint, nevertheless deserves great credit for insisting on the fact of their occurrence as distinct pathological events, and not as accompaniments to other diseases.

Such are the principal phenomena of the syphilitic fever as ordinarily witnessed. After it has lasted eight or ten days at most, it abates or passes off altogether, an eruption having at about that period made its appearance.

Syphilitic Affections of the Skin.—Systematic authors make several varieties of skin diseases depending upon constitutional syphilis. Some of these occur in the earlier or secondary stage, and others are among the later or tertiary manifestations. I think with Wilson,† who has written the most practical little work on this subject with which I am acquainted, that they may all be arranged under four forms:—

1st. Simple congestion of the skin, constituting *roseola* or *erythema*.

2d. Congestion, with ulceration of separate follicles, constituting *lichen*.

3d. Congestion, with elevation of a small group of

* On Myalgia, etc. London, 1860.

† On Syphilis, Constitutional and Hereditary, and on Syphilitic Eruptions. London, 1852. Also, on Diseases of the Skin.

follicles, or uniform tumefaction of a small portion of skin exceeding two lines in diameter, constituting *tubercula*.

4th. *Pustules*.

All the various eruptions may be classed under one or the other of these divisions. You may divide and subdivide almost *ad infinitum*, but you will gain nothing in practice by so doing.

Of these four groups of eruptions, the first and second are met with during the first stages of constitutional syphilis or the so-called secondary period, and those of the third and fourth are confined almost entirely to the tertiary period.

First Class. *Simple Congestion of the Skin*.—*Syphilitic roseola* or *erythema* is generally the earliest eruption to appear after the febrile condition just described, and is the only one of the first class. It is customary with authors to ascribe both it and the fever to an effort of the system to get rid of the morbid matter circulating through the organism. There is no foundation for any such assumption. The so-called effort always fails. The poison is never expelled in this way, but, if let alone, goes on to produce its other results. The fever and skin eruptions are to be regarded as among the regular and essential symptoms of constitutional syphilis, and not as any results of the attempt of the system to cast out the virus.

You may therefore look for the erythematous erup-

tion very early in the course of the disease—about eight or ten days after the commencement of the fever, in ordinary cases; sometimes a little later, rarely earlier.

It usually shows itself first upon the abdomen and insides of the thighs, not, however, being limited to these parts, but spreading gradually to the chest and extremities. It appears as ill-defined patches, of a pale-red color, or as round spots, or as rings, of a darker color than the area contained within them. In the first-mentioned form, the skin has all the appearance of that which it has during the eruptive stage of measles.

After lasting for from three to eight weeks ordinarily, during which period it generally assumes a copper-colored appearance, the eruption begins to fade, and the skin desquamates. Occasionally it remains for three or four months, but not often.

Along with the skin disease other affections manifest themselves. Thus, the throat generally becomes dry and painful, and, upon examination, mucous patches are found in the fauces; other portions of the mucous membranes, especially in the mouth and around the anus, are similarly attacked. We shall return to their consideration in a subsequent lecture.

Alopecia is also an accompaniment, although it occasionally occurs before any eruption. I have seen several such cases, and they should always excite your suspicion, if no readily assignable cause exists.

This falling off of the hair is not confined to syphilis, but, as you know, frequently results from scarlet fever, measles, small-pox, etc. In the syphilitic form, you will sometimes meet with scabs on the scalp, resulting from the individual scratching the patches of erythematous eruption in that locality.

As one of the accompaniments, though generally commencing previously, the engorgement of the post-cervical glands must not be forgotten,—not that it is of itself of any importance, as it never, so far as my knowledge extends, reaches the suppurative stage,—but it affords a most valuable diagnostic mark of the true nature of the eruption.

Do not fall into the mistake of regarding an eruption as non-syphilitic, because it is not of a copper color. In its first stages, the roseolous or erythematous affection is rose color or pale red, and, although it usually becomes darker with age, this is not always the case. Mere color alone is not worth much as a diagnostic sign, as it is modified more or less by the hue of the skin. It is better to look to all the circumstances, both prior and attendant, and you will rarely fail in arriving at a correct conclusion.

So far as syphilitic roseola alone is concerned it is not a troublesome affection. It is not at all of an irritative character either to the skin or the constitution, and yields readily to the course of treatment I shall hereafter describe to you.

There are several cases now in the house which I

advise you to study, as affording good examples of this affection; and there is a patient in St. John's Ward to whom I especially ask your attention, as exhibiting, in a marked degree, the characteristic eruption of roseola, and as having had a well-defined attack of syphilitic fever. I have already brought these cases before you in my clinical lectures, and have dwelt at length upon the symptoms, past and present.

There is one circumstance connected with syphilitic eruptions, and especially with roseola, to which I have as yet made but a passing allusion, but which I now wish to bring prominently before you—and that is, the remarkable *insensibility of the skin* which exists. Not only is the eruption entirely unaccompanied by irritation, (except at times on the scalp,) but the sensibility of the skin is lessened to other impressions, not only in parts where the eruption is prevailing, but in regions not yet attacked. If you question, upon the subject, any of the patients in the house who have syphilitic skin diseases, they will all tell you that they suffer no inconvenience therefrom; and you will probably find, as I have discovered in many instances, that they were not aware of any eruption till accident or the arrival of the time for changing their clothes revealed the condition of the skin.

Now, in erythematous eruptions depending on any other cause than syphilis, intolerable itching is one of the most troublesome and prominent symp-

toms. Here, then, you have an important diagnostic sign which you cannot too strongly fix in your minds.

But there is a further circumstance. If you pinch or irritate in any other way the skin of a patient who has entered upon the first stages of constitutional syphilis, especially when an eruption exists, you will find the sensibility greatly lessened. By means of the *æsthesiometer* you can measure this relative loss of sensation. If you take this instrument, and, separating the points to the extent of one inch, place them on the breast of a healthy person, you will perceive that he clearly distinguishes the impression made by each point: he feels them both. But if, on the other hand, you separate them to the extent of two or even two and a half inches, and impress them on the chest of a patient suffering with a syphilitic skin disease, you will find that he cannot distinguish both points: he feels, in fact, but one sensation. In this patient—who has been brought into the room in order that you may see this fact for yourselves, and who has a very decided roseolar eruption—you perceive how well marked this circumstance is. You see that, though I have separated the points of the *æsthesiometer* to the extent of three inches, he is conscious of but one impression. On the back of the hand he cannot distinguish both points when they are separated to the extent of an inch and a half, while any of you can feel them both when they are less than half an inch apart. You see, too, that his hands have no eruption on them.

This general loss of sensibility in the skin is one of the effects of the blood poisoning. It does not last through the tertiary stage, and often disappears before the secondary stage is completed. It is a most valuable indication of the nature of the malady under which the patient is suffering.

One word in regard to the *æsthesiometer* itself. The form I prefer is, as you are aware, a pair of dividers, to one leg of which an arc of a circle, so graduated as to measure tenths of an inch, is attached. A pair of ordinary dividers and a graduated rule will answer every purpose, with a little more trouble. The beam compass is also an excellent form of instrument for use, but is more expensive. Other instruments, all essentially the same thing, have been devised by Brown-Séquard, Sieveking, and others.

In the next lecture we will resume the consideration of the syphilitic diseases of the skin.

LECTURE IX.

SYPHILITIC LICHEN—SYPHILITIC TUBERCULES—SYPHILITIC PUSTULES (RUPIA)—ULCERS—MUCOUS PATCHES (VEGETATIONS, CONDYLOMATA)—SYPHILITIC ONYCHIA—SYPHILITIC IRITIS.

IN the last lecture we passed in review the principal phenomena of the syphilitic fever and of the earliest eruption of the skin—roseola or erythema—which makes its appearance. This affection is the only one which belongs to the first division, viz., simple congestion; but authors make several varieties of it, according to the shape and color of the patches. There is no essential difference in these so-called varieties, and I shall not, therefore, take up your time on the subject. If you want to puzzle yourselves over them, you can do so from almost any systematic treatise on skin diseases.

IN the next place, we have the second class of syphilitic skin diseases, viz., *congestion, with elevation of separate follicles*. The several varieties of *lichen* come under this head. Wilson makes four of them, but I have never been able to discover any difference between the three first, which he calls *lichen syphiliticus corymbosus*, *lichen syphiliticus disseminatus*, and *lichen syphiliticus confertus*. You will find all these, at the same time, in one patient, and the only distinction

between them consists in the size and arrangement of the follicles. There is, therefore, a distinction without a difference.

The fourth variety of Wilson—*lichen syphiliticus annulatus*—differs from the others only in the fact that the follicles are arranged in the form of rings, around patches of skin, which are of a yellow color. In other respects there is no difference. It is met with ordinarily in conjunction with the other forms, but I have seen it alone present. It is not so common as the other varieties.

The characteristic of these lichenous affections consists in the fact that the eruption is made up of small follicles or papules. Hence they are frequently designated as follicular or papular diseases. These papules vary in size, from that of the head of a pin to that of a small pea. As you will understand from the names I have mentioned, they are either arranged in groups, looking like raspberries in form, or scattered over the surface, more or less closely together, or presenting the appearance of rings. Each papule is distinct, no matter under what form the eruptions may appear. When they first make their appearance, the papules are of a dull-red color, but after they have been out a few days, they become copper-colored. They terminate by resolution or desquamation, suppuration seldom taking place. They do not appear to evince a proclivity for any particular part of the body. They last two or three months.

Though usually following roseola, syphilitic papules may be the first cutaneous affection which gives evidence of the contamination of the system. They always appear early in the course of the disease. Occasionally, roseolous and papular eruptions exist at the same time, though this is not often the case. There are several good examples of syphilitic papular disease now in the house, to which I have already several times directed your attention, and which I shall more particularly bring before you this morning.

Several eruptions of papules may take place; and hence it is not uncommon to find them, in all stages of progress, in the same individual. They cause little or no irritation, resembling, in this circumstance, the erythematous affection.

The third class of syphilitic skin diseases is that in which there is *congestion, with the elevation of small groups of follicles, or uniform tumefaction of small portions of skin more than two lines in diameter.*

There is no other essential difference in appearance between the eruptions of this class and those last described than that depending on size. In the former case, each papule consists of a single cutaneous follicle; in the latter, each elevation or tubercle is made up of many such follicles. In size, they vary from a diameter of two lines to half or three-quarters of an inch.

Tubercular eruptions are not met with in the early stages of syphilis, and are always preceded by either

erythematous or papular diseases. I have never seen them occur within a year after infection, and usually four, five, and even more years elapse. Indeed, it is not uncommon to have them appear for the first time fifteen or twenty years after contagion. Occasionally they are produced from the development of a previous roseolous or lichenous affection, but usually are originally formed.

They are not confined to any part of the body, and are rarely very extensively distributed. Generally the face and body are affected.

Syphilitic tubercles differ from lichenous papules in the fact that they often evince a strong tendency to ulcerate. Pus is formed in them; a crust is produced at the apex of each tubercle; this is rubbed off, and an ulcer results. But they do not always have this disposition. Occasionally they terminate in resolution, and then the epidermis covering them desquamates and falls off.

Tubercular diseases are divided by Wilson into the same varieties as the papular affections. Essentially there is no difference between them. They are difficult of cure, remaining sometimes for several years, in spite of all treatment. I have a case now under my care which has persisted for eleven years, notwithstanding every means which wealth can obtain has been employed.

The fourth class of syphilitic eruptions—the *pustular*—is likewise peculiar to the latter stages of syph-

ilis. The only disease belonging to this class is that ordinarily denominated *rupia*. It commences as a pustule; a scab forms on the summit of it, and this becomes thicker and thicker by the suppurative process, which is going on in the ulcer beneath, and the drying of fresh quantities of pus. This scab is composed of scales of various sizes. Sometimes these form a mass of a conical form, and then the name of *rupia prominens* is given to it. In size, these scabs vary from a diameter of half an inch to two or three inches. Each scab is surrounded by a copper-colored areola, and the ulcer underneath is deep, excavated, and, if the edge of the scab is raised, discharges a sanguineo-purulent matter of a very unhealthy appearance.

Rupia is always accompanied by a depraved habit of body, resembling in many particulars that so characteristic of scurvy.

There is an exceedingly well-marked case of rupia now in the house, which you have had excellent opportunities for studying, and which I am sure you will not forget. Indeed, a case of this disease is not easily forgotten, so perfectly well marked are the appearances it presents.

Rupia is often regarded as a difficult affection to cure. I have rarely, however, had any trouble with it. The vitiated state of the system under which the disease is developed must not be forgotten, nor the means of restoring it to a good condition neglected.

Having now described to you, in very brief terms, the principal forms of syphilitic skin diseases, we have, in the next place, to consider the affections to which the skin is subject, which are not properly to be classed as eruptions; and, also, the affections to which the appendages of the skin and the mucous membranes are liable through the action of the syphilitic virus.

Ulcers clearly due to a syphilitic cause are often met with in the course of the disease, and, though usually occurring at a late stage, are occasionally produced during the secondary period. They may be due to suppuration of an existing cutaneous eruption; may commence by inflammation of a circumscribed patch of skin; or may result from an injury received during the prevalence of the syphilitic taint of the system.

Syphilitic ulcers are generally deep, foul, and unhealthy looking, are extremely chronic in their character, heal with difficulty, and may appear in almost any part of the body. I have seen them more frequently on the face and lower extremities than on other portions of the surface. Occasionally they exhibit a tendency to phagedenic action, and then require active measures for their treatment.

You must not confound these secondary and tertiary ulcers with those of the primary stage, which affect the genital organs and other regions, as the consequence of the direct inoculation of the syphilitic

virus. The characteristics are, however, so very distinct that you are not likely to mistake one for the other.

Mucous patches appear at an early period of the constitutional infection, generally in connection with or immediately subsequent to the roseolous eruption. They are not, as their name would indicate, confined to the mucous membranes, but also affect the skin, especially in the vicinity of the orifices of the gastrointestinal canal, and in women about the vulva. They may be met with in other parts of the body where there are folds of skin, as in the groin, the axilla, between the toes, etc. Those which are found upon the skin proper are often called *condylomata* or *warts*, and attain sometimes to a great size.

Mucous patches in the mucous membranes are of a dirty-gray color, irregular in size and form, and not elevated above the neighboring surface. When they occur in the fauces or on the tonsils, the syphilitic sore-throat results. It is not uncommon for them to terminate in ulceration. They are not easily cured, and, even when removed, frequently return. Syphilitic laryngitis is generally due to this form of inflammation.

In the form of vegetations or condylomata, mucous patches are not difficult to detect. You have had many opportunities for observing them in almost all their localities, and it is not probable that you will mistake them for anything else. Their appearance

is perfectly characteristic. Occasionally a discharge takes place from them, and they often evince a strong tendency to ulceration.

Condylomata may arise from the surface of a primary infecting chancre. In such cases they appear to be due to exuberance of granulations. They only occur in such a situation when the chancre is in process of healing.

Mucous patches occurring about the verge of the anus give rise to considerable pain and irritation, which are much increased should ulceration, as it often does, supervene. Every evacuation from the bowels causes great suffering.

Syphilitic onychia, though not often met with in the earlier stages of constitutional syphilis, may be considered here, on account of its connection with the subjects already touched upon. You had an opportunity, a few days ago, of witnessing a very decided case of this affection, and I then took occasion to point out its characteristics to you. You will recollect that in this case there was extensive ulceration, a circumstance which, though common, is not of universal occurrence.

Syphilitic onychia is due to syphilitic inflammation of the matrix of the nail of either a finger or toe, generally the former. The parts become red, swollen, and painful, and from between the integument and the base of the nail a discharge of badly-formed pus takes place. Occasionally it happens that the nail

comes away without any of the appearances above mentioned being produced. In the latter stages, after ulceration has taken place, extensive granulations of a fungous character are formed, and add much to the disagreeable features of the case. Occasionally the pain attendant upon syphilitic onychia is very intense. Should the matrix escape ulceration, the nail, which has become detached, is reproduced; but if, on the contrary, the matrix is attacked with ulceration, the lost nail is never restored. Remember these facts. It was only a few days ago that I heard a surgeon—a young one, to be sure—promise a patient, with much positiveness, that the nail of his great toe, which had been lost through the progress of the affection under consideration, and in which the matrix was very extensively diseased, would be reformed. Under the circumstances, such an event was absolutely impossible.

Syphilitic iritis may occur either as an early or a late manifestation of constitutional infection. If the former, its progress is generally much more rapid than if its appearance is delayed till seven or eight months have elapsed.

The earliest symptom of this diseased condition is redness of the eye, due to injection of the vessels of the conjunctival and sclerotic coats. This redness, however, is not generally diffused over the whole surface of the eye or inner surface of the lids, but is, in a great measure, restricted to the circle formed by

the junction of the sclerotic coat with the cornea. The color is not a deep red, but is rather of a purplish hue; the cornea loses its brilliancy and becomes hazy, and the iris very soon undergoes an alteration of its natural color, and becomes sluggish in its movements; little yellow tubercles appear upon its surface, and the pupil becomes irregular in shape from adhesions which have been formed between the iris and the anterior capsule of the lens. With these symptoms there are associated photophobia, dimness of vision, and often intense pain, both in the eyeball and surrounding structures. Occasionally the pain is not much complained of, but there is always more or less uneasiness.

I know of no means of diagnosing syphilitic iritis from that due to any other cause, so far as the inherent symptoms are concerned. By questioning and observation you will rarely, however, be led into error. Often you will find some other manifestation of syphilis coexisting; and even when this is not so, the fact that nearly all cases of iritis are dependent on a syphilitic taint, is sufficient to excite your suspicions and inquiries.

Iritis, occurring at a late stage of constitutional syphilis, is, as I have said, of slow progress, and the symptoms are less distinctly pronounced. There is, however, on this account, more danger to be apprehended, as the disease may get a firm foothold before it is detected. Besides, the constitution of the pa-

tient is generally enfeebled and depraved, and does not admit of such active measures being taken as when the disease is met with during the first five or six months of infection.

There are other diseases of the eye due to syphilitic infection, upon which, however, I do not propose to dwell, and which require no special treatment beyond that necessary for the general eradication of the morbid condition of the system.

In the next lecture I shall speak of the general treatment of constitutional syphilis, and of that specially applicable to the affections which have been brought under your notice.

LECTURE X.

TREATMENT OF THE EARLY STAGES OF CONSTITUTIONAL SYPHILIS—
SYPHILIS SELF-CURABLE—REASONS WHY MEDICINES SHOULD BE
USED—MERCURY—ABUSE OF THIS DRUG—ADVANTAGES OF ITS
USE—PREPARATIONS TO BE EMPLOYED—DURATION OF TREAT-
MENT—OTHER MEDICINES—TONICS—OPIUM.

THE treatment of constitutional syphilis may be divided into that which is proper during the first stages, when the superficial tissues are mainly affected, and that for the latter stages, when the deep-seated structures are principally the subjects of disease. It is only with the first of these that we have to concern ourselves in the present lecture.

From almost the very day that syphilis was first recognized in Europe, a division has existed among physicians in regard to its treatment with or without medicines; and even now we have as well-marked a diversity of opinion. It is very natural there should be this difference, because those who contend that syphilis disappears under the use of drugs, and those who affirm that a patient with this disease recovers without the administration of any medicine whatever, are both right. There is no known disease which is curable with drugs that is not also curable without drugs. Recollect this fact, and you will be less vain-

glorious when your patients get well under your system of medication, whatever it may be. I do not say, mind, that in all cases, or even generally, a disease disappears as well without as with medicine; but I do say, that there are cases of all curable diseases which are recovered from without a grain of what are called drugs going into the patient's system. Take, for instance, intermittent fever. We know how readily quinine cures it in ordinary cases; and yet we know that the disease is a self-limited one, and that if the cause is removed, it ceases of itself. So with pneumonia, dysentery, gonorrhoea, etc.; and so also with syphilis, many cases recovering altogether under the simple influence of diet, fresh air, and a regular mode of life in all essential respects.

But because a disease disappears without the administration of medicine, are we justified in omitting to employ those means which experience has demonstrated cause it to disappear sooner and with less damage to the system than if they are not used? By no means. If a disease could be eradicated as well without as with medicine, and simply by the employment of hygienic means, I would be one of the first to say, away with drugs! But, unfortunately, such is not the case. I say unfortunately, because there are few drugs which can be given without a more or less injurious effect being produced upon the organism; so long, however, as the remedy is not worse than the disease, it is our duty to use it. We have, there-

fore, the two grand classes, of those who contend that some medicine is required in the treatment of constitutional syphilis, and those who leave the disease to hygienic means and nature.

But this is not all. The first class is still further divided into those who think mercury the only drug capable of curing syphilis, and those who never give it under any circumstances. These are yet subdivided into sects of so many different shades of doctrine that it is scarcely worth while to dwell upon them, so far as any profit to us is concerned. For all practical purposes, the question is, "Can syphilis be cured without the use of mercury; and if yes, can it be as speedily and as effectually so cured?"

To the first part of this question we must give an unqualified assent. Experience has shown, over and over again, that syphilis is in time frequently eradicated from the system without a particle of mercury having been administered. Of course, if we admit that the disease gets well without any medicine at all, the less is included in the greater, and we must acknowledge that it will disappear without mercury being taken into the system.

To the second part of the question, can it (syphilis) be cured as speedily and as effectually without as with mercury? our answer must be given just as positively in the negative. If this is a well-ascertained fact, it is of course our duty to treat the disease with mercury, just as it is our duty to treat

intermittent fever with quinine when we can get it, although other drugs will cure it, or although it will get well of itself in time. It is even more so, because syphilis is a disease which produces such horrible ravages in the system, that there is no excuse for us if we allow it to remain in the organism one day longer than is absolutely necessary.

A few years—only two or three—after syphilis made its appearance in Europe, mercury was recommended for its cure. Since that period the attacks upon it have been many and fierce, but without much effect, if any, in limiting its use, so far as true syphilis is concerned. Undoubtedly a great deal of the opposition which this drug has encountered has been due to the fact that its advocates frequently gave it in cases that were not syphilitic, and administered it to such an extent that the remedy really became worse than the disease. In a work on surgery, embracing the clinical and didactic lectures by no less a surgeon than Mr. William Lawrence, published only last year, (1863,) you will find this eminent medical gentleman not only recommending the use of mercury in phagedenic chancres, but contending strenuously for its power of arresting the morbid process when nothing else can. No distinction is made between infecting and non-infecting chancres. All are treated with mercury; and the remark is made that the success is so great that secondary symptoms rarely follow. Of course you know why they do not follow.

Mr. Lawrence is by no means alone in this wholesale employment of mercury in chancres of all kinds. You will find many of the older surgeons, both in this country and in Europe, following a similar line of practice. The drug has therefore been abused, and, as is always the case, many under such circumstances decry its use entirely.

You know what my views are relative to mercury. I have told you, over and over again, what a double-edged weapon it is, and that it has been and is still abused to such an extent, that I verily believe the evil it has done far exceeds all the beneficial effects which have resulted from its use. But the abuse is no argument against its employment by surgeons and physicians capable of using it properly; and if we could restrict it to such there would be no trouble. When, however, I look at cases such as have come into these wards, and when I reflect upon what I have seen elsewhere, I am very much disposed to think that we would be much better off if it had never been employed in medicine.

However, we are now considering the treatment of constitutional syphilis, and, as I have already told you, I regard mercury as a highly proper and very valuable means to be used in this disease. I do not regard it as essential, but I do look upon it as almost as potent a specific against the venereal poison as is quinia against the morbid matter which gives rise to intermittent fever. I do not speak without having

myself often treated the disease under consideration without any form of mercury, either internally or externally administered. At the commencement of my military medical life I was deeply imbued with the views of Mr. Guthrie, who was a violent anti-mercurialist, and I treated for two or three years all my cases of syphilis without an atom of this medicine. But I was not satisfied with the results. The manifestations of this disease were more severe and lasted longer than was to have been expected; and I, therefore, did what I trust you will all do when you discover that you have been holding erroneous views and doing wrong acts—changed my practice; and I have never regretted it to this day.

When, therefore, you have an undoubted case of constitutional syphilis, and you see it in its early stages,—unless there is some coexistent circumstance which contraindicates the use of this medicine, such as scurvy, chlorosis, or any other anæmic affection of severe form,—put the patient gently but firmly under the influence of mercury. It is never necessary to salivate, but you should keep up mild mercurialism for four or five months after every vestige of the disease has disappeared; and you should be prepared to resume the medicine if any symptom reappears.

These remarks apply to all the skin diseases and to all the other manifestations of the early stage of constitutional syphilis, and, as you perceive, are general in their character. I have now to tell you what

mercurials to use, how to use them, and with what drugs and hygienic treatment they may be advantageously conjoined.

For internal administration I usually employ the bichloride or corrosive sublimate, and I very greatly prefer, for the reasons already stated to you, to conjoin it with iodide of potassium, and in the same proportions as those then indicated, (page 101,) gradually increasing the dose till, after twenty or thirty days, a quarter of a grain is taken three times per day. I have never seen salivation induced by this plan, although I have kept it up continuously for six and eight months at a time. I know of no better combination than this for internal use.

But it occasionally happens that the bichloride cannot be taken, owing to the irritation it produces on the gastro-intestinal mucous membrane. I have often, very much to my regret, been obliged to discontinue its use on account of the severe vomiting and purging it has caused. In such a case, we have a valuable substitute in the protiodide; and of this preparation you may give from half a grain to two grains three times a day. I usually begin with the smaller dose, and continue it, in the form of pills, for ten or fifteen days; then I increase the dose to one grain, taken as in the first instance, and continued for about a month; and then the dose is again doubled, and persevered with for five or six months, or as long as it continues to do good. Should any

tendency be shown to salivation, the dose must be reduced; and when the internal symptoms have disappeared, it may be again increased. Recollect, however, that the mercurial treatment of syphilis must be continued for at least six months, no matter how efficacious it may prove in causing all evidences of constitutional infection to disappear.

Other mercurials may be made use of, but I know of no advantages which any of them possess for internal administration over those mentioned.

With regard to other remedies to be employed during the early stages of constitutional syphilis, with the exception of the iodide of potassium, none are entitled to the least consideration as antidotes to, or eliminators of, the poison. Guaiacum, yellow dock, sarsaparilla, etc. are absolutely worthless. The latter has enjoyed a great reputation as a valuable agent, but I have never seen the least effect produced from it, either in syphilis or in any other disease. Iodide of potassium certainly causes many of the manifestations of constitutional syphilis to disappear; but to prevent their return, mercury, in some form or other, must be employed. This is one reason why I am so partial to the preparation made by dissolving corrosive sublimate in a solution of this salt.

Guaiacum formerly stood high as an antisymphilitic remedy. It was used by the Indians of Santo Domingo, according to some authors, and was introduced into Europe by the Spaniards. Boerhaave spoke of

it in high terms. Experience has not confirmed the stories which have been told of its virtues, and it is now scarcely ever employed, either alone or in combination with mercury. In relieving the nocturnal pains which occur in the bones and muscles, I think it may be used occasionally with advantage, provided dependence is not placed upon it as a curative agent. Its effects are altogether temporary, and it should never be relied on to the exclusion of mercury.

Nitric acid has also been used, and I have occasionally employed it, but have never perceived that it exerted any specific effect over the disease.

I might take up your time to an almost indefinite extent were I touch upon the medicines which have enjoyed a temporary reputation as antisypilitics. Their name is legion,—and nothing is left of them but the name. As remedies, no one now thinks of using them. But there are medicines which are valuable adjuncts, not as possessing any specific effect, but as tending to build up and support the system. Among these, the preparations of iron are entitled to high consideration, as are likewise the vegetable tonics, gentian, cinchona, quassia, etc. But I think you will not fail to derive advantages of a very decided character, in cases where the system is broken down, and in which a tonic is required, from the permanganate of potassa. It should be given in doses of half a grain three times a day, dissolved in a wine-glassful of pure water, (distilled water is preferable,)

care being taken to prevent its contact with any organic matter before it is administered, whereby decomposition would take place.

Another medicine, which is neither possessed of antidotal nor tonic properties, is yet very useful as an adjunct to mercury—I refer to opium. It prevents the irritating effects upon the stomach and bowels, which might otherwise be produced, quiets the nervous system, and lessens pain. It will often, therefore, be advantageous to combine from one-eighth to one-fourth of a grain of opium with each dose of the mercurial, or to give it immediately afterward.

In the next lecture the subjects of external medication, and the hygienic measures proper to be adopted, will be considered.

LECTURE XI.

EXTERNAL USE OF MERCURY IN SYPHILIS—INUNCTION—BATHS—
FUMIGATION—MR. PARKER'S MERCURIAL VAPOR BATH—MR.
HENRY LEE'S MERCURIAL VAPOR BATH—HYGIENIC TREATMENT
—CLEANLINESS, DIET, FRESH AIR, ETC.

IN the last lecture we considered the treatment of the first stages of constitutional syphilis by means of internal medicines. To-day I propose to bring before you the subject of external medication. The remarks which I shall have to make under this head will be almost entirely restricted to the use of mercury; for, although other medicines have been and still are used externally in the treatment of the accidents of syphilis, it will not be worth our while, except, perhaps, in one or two instances, to refer to them.

Mercury is employed externally as an antisymphilitic in three ways—by inunction, by baths, and by fumigation. It is also taken into the system by inhalation, which, as the process resembles that used for fumigation, may be considered in connection with it.

It is well that we have these means of placing the system under the influence of mercury in syphilis, without bringing the drug in contact with the mucous membrane of the intestinal canal. For, besides going directly into the blood, the medicine exerts its

local effect upon the skin, which is so usually the seat of diseased action. Moreover, we are spared the annoyance of being obliged to suspend the remedy on account of irritation of the stomach and bowels, which, in spite of all our care, it frequently produces.

Inunction may be very generally used with great advantage, and, were it not for the uncleanness of the process, would be much more in vogue than it is. The mercurial ointment is the preparation to be employed, and it should be rubbed into the skin of the groin and inner sides of the thighs, to the extent of about a drachm, every day at bedtime. The next morning it should be well washed off, and thus a great part of the discomfort produced by it is avoided. It should not be rubbed twice successively into the same part of the skin—one groin and thigh being used one night, and the others the next. It should be continued for five or six months at least; and this constitutes another difficulty, as it is not often patients can be made to persevere with it after the more obvious symptoms of disease have disappeared. Salivation is not ordinarily induced, and if it is, the process should be discontinued for a little while, or else less frequently made use of.

The efficacy of inunction is very much increased by the combined use of hot water or vapor baths, by which the skin is rendered more soft and pliable, the pores opened, and the absorption of the medicine pro-

moted. It is better for the patient to rub in the ointment himself, as by this means it is also absorbed through the palms of the hands. If an attendant performs the operation, his hands should be protected by thick buckskin gloves. About twenty minutes are requisite for each thorough inunction.

In hospital practice, inunction is much more readily made use of than in private life, where, for the reasons stated, objections to it will always be made.

Mercurial baths are not so often employed as they should be. It is difficult to see what objection can be brought to bear against them, for they afford a safe, elegant, and tolerably efficacious means of introducing mercury into the system. They may be taken either hot or cold, though the former are decidedly to be preferred. I have been much in the habit of using them, and have almost always had occasion to be pleased with their effect, for not only is the mercury taken into the system, but it acts locally upon whatever external accident may be present.

To a bath of some thirty gallons of water, one drachm of corrosive sublimate and three or four drachms of iodide of potassium may be added. This makes a very good strength to commence with, though the quantity, both of the mercurial and of the iodide of potassium, should be gradually increased to the extent of two drachms of the former to one ounce of the latter. The patient should remain in the bath for half an hour; after which the skin should

be rubbed perfectly dry, and flannel worn next to it. I know of no disadvantages connected with this plan of treatment, except that it is not so active as others. More time is therefore required to effect a cure, but as there are no unpleasant features associated with the process, this is not of so much account. The gums generally become a little tender under its influence, but salivation is rarely if ever produced. I have never seen a case due to the use of mercury in this form. In infantile syphilis I prefer the use of the warm-water mercurial bath, made as I have described, though with somewhat less quantities of the active ingredients, to any other way of treating the disease.

Mercurial fumigation has, within the past few years, been brought into more general use than formerly. Its employment as an antisymphilitic dates from within eight or ten years after the recognition of syphilis in Europe, though for other diseases it had been used certainly as far back as the time of Hippocrates.

At first, the metallic mercury or the sulphuret was thrown on live coals, in conjunction with oil of turpentine, or substances of a fatty nature, and the patient, shut up in a close room, was exposed to the fumes, inhaling them or not, according to the whim or caprice of the surgeon. If it was considered desirable that he should breathe fresh air, a tube was given him, connected with the external atmosphere,

through which he could respire. Various modifications in the method and materials were made, but the results were not considered as being beneficial, and fumigation therefore fell into disuse, till a few years since Mr. Langston Parker devised a means whereby mercury may be administered in the form of vapor applied to the skin, without any of the disadvantages of the older methods, but with very decided benefit to the syphilitic patient.

As employed by Mr. Parker, and as now generally used, the *mercurial vapor bath* would be a more appropriate name than that of *mercurial fumigation*, for the drug is not brought in actual contact with the fire, and is, moreover, diffused with the vapor of water. You have seen Mr. Parker's method used quite frequently, but I shall, nevertheless, describe the apparatus which he employs, and point out the process made use of, so as to aid you in recollecting the principle involved.

A copper box is, as you see, so made as at one end to contain water and at the other a metal plate. There are two spirit-lamps, one under the water and one under the plate. By putting warm water into the trough end, and about two drachms of the bisulphuret of mercury or of the red or gray oxide on the plate, the arrangement is ready for use, and only requires that the lamps be lighted to set it in operation.

The box is placed under a chair, upon which the patient sits. A framework, covered with oil-cloth,

India-rubber, or other impervious material, is placed over him, a hole, capable of being closed at pleasure, being cut in the material, through which the head may be protruded, in case it is not deemed desirable that the vapor should be inhaled.

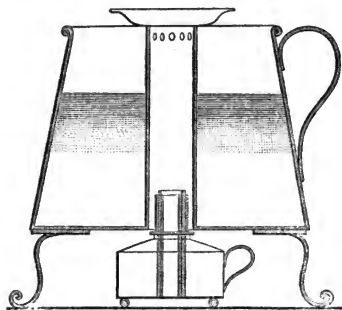
All being thus arranged, the lamps are lighted. The vapor of water, together with that of mercury, are very soon given off in large quantity; the heat developed is also very great; and thus the patient is subjected to the combined action of these powerful agents. In the course of from ten to fifteen minutes a violent perspiration is excited. The action should be continued for from twenty to thirty minutes, when the lamps should be extinguished, and the patient allowed to cool gradually. The framework is then removed, and the body is rubbed perfectly dry. The patient should then go to bed, and remain covered up for half an hour or so. Mr. Parker advises that he should, during the repose after the bath, drink a cup of warm decoction of guaiacum or sarsaparilla. This is altogether unnecessary, and can only do good because the dose is warm. A little flaxseed tea or warm lemonade is much more pleasant, and equally efficacious.

Mr. Parker prefers the bisulphuret of mercury in diseases of the skin depending on syphilis, but it is important to recollect that, if this preparation is used, the head must be pushed through the hole, as the vapor of mercury is conjoined with that of sulphur.

ous acid, which is irrespirable. He interdicts smoking tobacco during the period the baths are being used; but there is no reason why it should be omitted that I can see.

Another way of managing the mercurial vapor bath—and one which I think preferable to that of Mr. Parker—is the one described by Mr. Henry Lee. It is far more convenient, and, from the fact that a fixed mercurial compound (calomel) is used, decidedly more efficacious and certain in its action.

Fig. 6.



The apparatus consists, as you see, of a cup, into the bottom of which a round hole is cut, to the edges of which a cylinder is soldered. It therefore somewhat resembles the vessels in which poundcakes, with a hole through the middle, are baked. On top of the cylinder is a tin plate; and near its top a number of holes are cut, or, as in this instance, the plate does

not quite cover the orifice. The whole rests upon a tripod.

When it is required for use, boiling water is put into the vessel to about two-thirds of its capacity; calomel is put on the plate over the cylinder, and a spirit-lamp, preferably one with an argand burner, immediately under the cylinder, which serves for a chimney. The water is thus made to boil, and the calomel is vaporized at the same time, the whole arrangement being very simple, (Fig. 6.)

The patient, being placed on a chair or low stool, is covered, as in Mr. Parker's method, or an India-rubber blanket is fastened around his neck, and spread out, so as to leave a funnel-shaped space under it; the apparatus, with the lamp lighted, is also placed under the framework or blanket, and the arrangement is completed. Fifteen or twenty grains of calomel are sufficient. The action should be kept up for about twenty minutes, and a little of the vapor may be inhaled by allowing it to escape at the place where the neck is encircled by the blanket. The head should not be put under the blanket, as the vapor is too powerful to be inhaled, unless largely diluted with air. A little experience will teach how to regulate the quantity of water in the vessel, and of alcohol in the lamp, to the time the bath is to be taken, and the amount of calomel, so that the lamp will go out when the water and mercurial have been volatilized. When the patient is sufficiently cooled, the impervi-

ous covering is removed, and, without disturbing the fine layer of calomel which is over the surface of the body, a night-dress is put on, and he should go to bed. Be careful, therefore, to recollect that, in this process, the body is not wiped dry, as in Mr. Parker's, until at least twelve hours have elapsed. One such bath may be taken twice a week, until all syphilitic symptoms have disappeared; and less frequently for two or three weeks longer. Salivation is rarely induced, though a slight tenderness of the gums and the mercurial odor of the breath are usually caused. The arrangement can be used for any particular part of the body also, when such a course is deemed necessary.

I have never seen any ill consequences follow the use of mercury by this method. It certainly produces less constitutional disturbance than when the medicine is given by the mouth; but it must be admitted that it is not so effectual in eradicating the disease. In fact, inunctions, baths, and fumigations of all kinds are but imperfect substitutes for internal medication, and, to my mind, not to be relied on exclusively in the treatment of constitutional syphilis. In the treatment of syphilitic diseases of the skin, mercurial fumigation and bathing are exceedingly valuable adjuncts, as the mercury is not only taken into the system, but is brought in immediate contact with the diseased portion of the body; but even here the medicine should be administered

internally, if it is practicable. There are cases, however, in which mercury cannot be taken by the mouth, and then in the calomel vapor bath of Mr. Henry Lee we have, I think, the best substitute. Any tinman can make the apparatus, and any patient can use it on himself or herself with perfect facility.

I might extend my remarks on the general treatment of the early stages of constitutional syphilis, but I do not believe there is any material practical point which has been omitted. When we come to the special treatment of the individual pathological manifestations, we will return to the subject more particularly.

Relative to the *hygienic management* of syphilis, there is much that could be said with advantage, but I shall restrict myself to the more important points.

In the first place, nothing is more essential than *cleanliness*. This virtue is said to be next to godliness; in the treatment of syphilis it stands before this quality, and should be most strenuously insisted upon. The patient should daily take a warm bath, and should make a free use of soap to all parts of the body. The clothes should be frequently changed, especially those which come in immediate contact with the body. The mouth and throat should be washed and the teeth cleansed several times a day; and for both these purposes the permanganate of potash should be employed, a half a grain of the crystals

being put into the mug of water used. Nothing so thoroughly destroys the bad odor of the secretions of the mouth in a syphilitic patient, especially in one who is taking mercury, as the permanganate of potash.

In regard to *diet*, care should be taken that the food is of good quality and nutritious. Salt meat should not be eaten if it can be avoided, as it appears to exercise an injurious effect upon the disease. Stimulants should be used in moderation, but I know no reason why, if the patient has been in the habit of taking a glass of wine or so at his dinner, he should abandon the practice because he has syphilis. He should avoid excess. The same is true of tobacco, coffee, and tea. The custom, which I have often seen carried out, of confining a syphilitic patient to slops and farinacea, is injurious to him. He wants all the good blood he can get, and good blood cannot be made out of such stuff. The rule should be that the appetite should be satisfied, and, that what is known to produce disturbance in the system should be avoided. The rest can safely be left to the inclinations of the individual most concerned.

Fresh air is another essential. The rooms used by the patient, especially that in which he sleeps, should be well ventilated; and he should be encouraged to spend as much time as he conveniently can in the open air, when the weather is not bad. Sudden alternations of temperature should be guarded against,

and damp weather is to be especially avoided. The air of the mountains or sea-shore should be enjoyed by all those who, during the summer season, can avail themselves of the advantages of these localities.

The *clothing* should always be of such a character as will preserve the surface of the body from sudden chilling. Flannel should, therefore, always be worn next the skin.

When it is added that the syphilitic individual should keep regular hours, that he should abstain from venereal excesses, that he should take moderate but constant bodily exercise, and that, in short, he should lead a temperate and equable life, both as regards his physical and mental existences, you have all the principal parts of the hygienic treatment, stripped of their details, before you. By these means it is possible to cure syphilis, but, for the reasons mentioned, it is not safe for you to depend upon them. As accessories, however, they should not be, as they too frequently are, neglected, for much is to be accomplished by their judicious use. You should recollect that drugs are necessary evils, only second, in many cases, to the diseases for which they are administered; and every physician or surgeon who is above routine, and is possessed of a sufficiently intelligent mind, looks forward to the day when we may, by a more complete acquaintance with the laws of our being, be enabled to dispense with their use to a great extent, if not altogether. Till that time arrives,

however, we must be content to use such medicines as nature puts in our hands, and, for the present at least, it will not do for you to discard them in that most loathsome but most philosophical disease which is under our consideration.

In the next lecture I propose to take up the special treatment of the individual accidents which engaged our attention a few days ago.

LECTURE XII.

TREATMENT OF SYPHILITIC FEVER—NEURALGIC AND MUSCULAR PAINS—ALOPECIA—SKIN DISEASES—MUCOUS PATCHES—SYPHILITIC IRITIS—MERCURY.

THE first manifestation of constitutional syphilis, to the treatment of which I wish to ask your attention, is the *sypilitic fever*. It sometimes happens that this is the earliest symptom of the infection of the system which is brought to your notice, and that no general treatment has previously been adopted. The first thing to be done is to commence with the administration of mercury, and the preparation used may be advantageously joined with opium or extract of hyoscyamus, in the proportions of one-fourth of a grain of the former or half a grain of the latter with each dose. Some authors recommend blood-letting when the fever is high, but I do not think the practice at all admissible. I am not aware of any event likely to make venesection proper. You do not want to deplete your patient, but to build him up. The fever is not a state of *sthenia*, but is due to a depraved condition of the system, which will infallibly be made worse by depletion. If there are evidences of gastric or intestinal derangement, a saline

purgative, such as Rochelle, Glauber's, or Epsom salts, may be given, and attention should especially be paid to the food and drink, which should not be of an irritating or too stimulating a character. Should the pains in the head or in the bones elsewhere become severe, the amount of opium recommended may be increased at bedtime. But the best remedy for these, as well as for all other accompaniments of the febrile condition, is mercury, and the sooner the patient is brought under its influence the better.

The *neuralgic* and *muscular pains* may be most effectually relieved by the hypodermic injection of a solution of morphia along the course of the painful nerve or muscle. Four or five drops of a solution containing one grain of morphia to a drachm of water may be thus used. A few moments suffice for the disappearance of all pain.

The *falling out of the hair*, which so generally occurs as one of the first symptoms of constitutional syphilis, is arrested and the hair restored, under the influence of the mercurial treatment. I have never seen a case which resisted the action of mercury. Some stimulating hair-wash may be employed in conjunction, and almost any of those sold by apothecaries will answer. A good one may be made with tincture of cantharides, glycerin, and some essential oil with a pleasant odor. Soap and water and rubbing with a coarse towel, a hair glove, or a brush are not to be neglected.

The *syphilitic diseases of the skin* are to be treated with mercury in some one or more of the ways already recommended. Mercurial baths and fumigations are of more general application in these affections than in any other manifestations of constitutional infection, though, if not contraindicated, mercury should be administered internally at the same time. There is nothing to be gained by trying any other substitute. Sulphur vapor baths are of some use as adjuncts, but they are not to take the place of the great antisyphilitic remedy. Cleanliness is especially necessary.

There is no one of the syphilodermata which requires special consideration in the treatment, unless it be *rupia*. All the rest are managed upon the same general plan; but this latter is usually the result, or the accompaniment of such a depraved state of the system, that especial attention should be given to building up the health of the patient to as nearly as possible the normal standard. With this view iron, bitter tonics, and good food should be prescribed, and all the hygienic means formerly mentioned should be brought into play. I have never seen *rupia* resist the solution of the bichloride of mercury in iodide of potassium, though I have witnessed cases that were very obstinate to other mercurial preparations.

In regard to local applications, I rarely use any except the baths and fumigations. Ointments are nasty things, and serve no useful purpose. In slough-

ing ulcers, a solution of bromine in alcohol, in the proportion of twenty to forty drops of the former to one ounce of the latter, makes an excellent wash; and a solution of permanganate of potassa, fifteen grains of the crystals to two or three ounces of water, is fully as good, if not better. Both these lotions may be used with great advantage in cases of phagedenic ulceration, which occasionally supervenes in tubercular skin disease in bad conditions of the system.

Mucous patches may be locally treated with solutions of nitrate of silver, tannin, permanganate of potassa, sulphate of copper, etc. It is the constitutional treatment, however, which cures them. Local remedies are merely accessory, and not of very great importance, unless there should be extensive ulcerations of the mucous membranes attacked. Condylomata get well also under the mercurial treatment; but as patients expect some local means to be employed, you may touch the diseased parts with a camel's-hair pencil dipped in solution of nitrate of silver or any of the other substances just mentioned.

The same remarks are applicable to *syphilitic onychia*. Here, however, if the pain is very great, opium may be applied locally in the form of an aqueous solution, and the cold water-dressing is always soothing. Poultices and ointments I do not like. You may use them if you choose, but they do no good, and are dirty and inconvenient.

In the treatment of *syphilitic iritis* you cannot be too prompt and energetic. The delay of a few hours may involve the loss of sight. The disease progresses with rapidity when it occurs early, and the pathological changes are of such a character that vision may be abolished before your treatment is fairly under way, unless your measures are characterized by discretion and activity.

In this, as in other syphilitic manifestations of the early period, mercury is the sheet-anchor. There are adjuncts, and valuable ones, too, but no substitutes. Do not be led away from its use by anything which you may hear or read against it. If you dispense with it, your patients will, in many instances, lose the sight, which otherwise would have been restored to them. The object, therefore, should be to bring the afflicted individual as rapidly as possible under the influence of mercury; and, therefore, I prefer to give the protoiodide, in doses of two grains, three times a day, to the bichloride and iodide of potassium, a compound which, though more penetrating and generally diffusible through the system than any other, is not sufficiently rapid in its action for our present purpose. The mercurial should be persisted in till the gums are rendered tender, without salivation being produced. As soon as the system is well under its influence, the disease will, in the great majority of instances, be seen to yield.

Scarcely inferior to mercury are the mydriatics,

medicines which cause dilatation of the pupil. As I told you in a former lecture, and as you have frequently seen in these wards, one of the consequences of iritis is an effusion of coagulable lymph, by which the margin of the iris and the anterior surface of the capsule of the lens become adherent. The objects of dilating the pupil are that, by drawing the margin of the iris away from the lens, these adhesions may be prevented; or, if they have already taken place, that they may be broken up by the traction induced, and the obliteration or irregular action of the pupil thus avoided.

For effecting dilatation of the pupil, nothing is better than atropia. A solution made by dissolving one grain of this substance in an ounce of distilled water, by the aid of two or three drops of acetic acid, is the preferable form for employing it. One drop of this solution should be put into the inner canthus of the eye two or three times a day. From this point it is rapidly diffused over the whole surface of the globe, and, besides dilating the pupil, lessens, through its sedative action, the pain and irritation.

In default of atropia, belladonna should be employed. The eye should be surrounded with the extract of this substance, and the application should be renewed twice in the twenty-four hours.

Should the system be in a bad condition, the mercury administered should be conjoined with quinine, from one to two grains of which may be given with

each dose; and if the restlessness is marked or the mercury shows any disposition to irritate the digestive tract, opium should be given with it. If there is inability to sleep, the quantity of this drug may be increased to one or two grains at bedtime.

Local applications do more harm than good. Fresh air should not only be inhaled by the patient, but should be allowed to reach the eye, for which purpose the organ should not be covered except by a green shade fastened to the forehead, and a portion of the day should be passed in the open air, whenever the weather does not positively forbid it. Blood-letting, either general or local, is not necessary, and in many cases would be decidedly injurious. Neither is low diet to be enforced. The food should be plain, unstimulating, but good and nourishing.

In the iritis occurring late in the progress of syphilis, mercury is not so generally admissible as in the form just considered. The system is then often in a broken-down condition, and requires active means for its restoration. Should such be the case, mydriatics and iodide of potassium, in large doses, should be mainly relied on; while at the same time the system should be supported by iron, vegetable tonics, and attention to the several hygienic measures already recommended.

So much for the affections which occur during what is called the secondary stage of syphilis, though you will observe that I have considered one or two

which are more usually met with at a later period. I have done this for the sake of convenience, and also because it is impossible to make the strict division, which some authors contend for, of secondary and tertiary symptoms, though, as I told you in a former lecture, it may be done to a considerable extent.

As you have seen, in all the secondary manifestations of syphilis, and even in some of those classed with the tertiary phenomena, mercury is the main reliance. You may cure them without it, but you run great risk of allowing unnecessary injury to be inflicted on your patient if you make the attempt. Use this potent remedy, but do not abuse it; for in ignorant or rash hands it is capable of causing as much if not more damage to the system than the disease for which it is administered. Occasionally you may meet with a patient to whom even a grain of this mineral is a virulent poison. If you are made aware of this fact before you commence your treatment, beware of subjecting the individual to the influence of a medicine the effects of which you cannot control. If it is not brought to your knowledge, and disasters ensue on the mercurial treatment, you are unfortunate but not criminal, if you have tried to find out any possible idiosyncrasy which would contraindicate the use of the drug in question.

I cannot avoid dwelling on this point, for I wish you to be strongly impressed with the great power of

mercury to do harm as well as good, and therefore I may repeat cautions which I have given you before. But the fact is, I am afraid of mercury. I know what it can do, and have seen so many cases in which, through indifference, ignorance, or recklessness, it has committed the most horrible ravages, that I never determine to subject a patient to mercurialization without feeling, in all its force, the responsibility assumed. I wish you to be actuated by a like feeling, and not to get into the habit of trifling with this dangerous weapon, by giving it for every little disorder to which the organism is subject.

In the next lecture we will consider the affections of the tertiary stage of syphilis.

LECTURE XIII.

**TERTIARY SYPHILIS—SYPHILITIC SARCOCELE—GUMMY TUMORS—
OSTEOSCOPIC PAINS—PERIOSTITIS AND OSTEO-MYELITIS—EXOS-
TOSSES—CARIES AND NECROSIS—TERTIARY DISEASE OF SKIN,
MUCOUS MEMBRANES, VISCERA, AND NERVOUS SYSTEM—TREAT-
MENT OF TERTIARY ACCIDENTS.**

AFTER the lapse of six months, and often of a longer period, the syphilitic poison exhibits its action more decidedly in the deep-seated tissues. This stage is called the tertiary, reckoning the indurated chancre as the first. Properly speaking, it is the secondary, and the secondary is the primary, because the chancre is not syphilis; but, as I do not wish to cause any confusion in your minds, I will adhere to the name by which it is most usually known.

The cellular tissue, muscles, bones, and periosteum, testicles, and other viscera, and the nervous system are the parts particularly liable to tertiary accidents, though the skin and mucous membranes are not exempt.

The tertiary stage is not always met with, for, if the treatment has been judicious and prompt, the morbid matter of syphilis is overcome before this period is reached; or, if not followed by complete success, the course of the disease is so much inter-

ferred with that there is no regularity in the order with which the manifestations of continued infection occur. Under all circumstances, there is much less uniformity in their development than prevails in those of the former stage.

Syphilitic sarcocoele or *orchitis* is among the earliest of the tertiary accidents, and is occasionally met with among those of the secondary period. It commences without pain, and generally pursues its course without this symptom being present. The organ increases slowly till it becomes perhaps as large as a small orange, and then is inconvenient, on account of its weight and size. So insensible has the testicle become by this time, that even firm pressure fails to cause, in the majority of cases, any uneasy sensation.

The disease is usually limited to the body of the testicle. I have never seen a case in which even the epididymis was involved, though some authors speak of the part as being generally affected. The tumor is hard, and not subject to such great enlargement as is met with in some other diseases of the testicle. It generally, if not properly treated, lasts for several years, but rarely suppurates, though a few cases have been reported in which this event ensued.

When the disease is limited to one testicle, sexual desires may still exist. This is generally the case; but sometimes both testicles are affected, and then the animal passion becomes by degrees entirely ex-

tinct. A short time since I had an opportunity of examining microscopically a testicle which had been extirpated on account of its being attacked by the disease in question, (a very bad piece of surgery, by-the-way,) and I was unable to discover the slightest appearance of spermatozoa in any part of it.

Syphilitic induration of the testicle is the result of a slow and indolent inflammatory process, followed by the deposit of a peculiar material similar in its microscopical features to ordinary connective tissue, but more abundant in free nuclei. This is found both between the seminal canals and within them, and by its pressure causes their complete obliteration. But, with the absorption of this new material under appropriate treatment, the canals are re-established, and the function of the testicle restored to a more or less perfect extent, though commonly the organ is left in a somewhat atrophied condition.

Gummy tumors are met with only after syphilis has existed many months. They are produced in the submucous or subcutaneous cellular tissue, and are also found, of precisely the like histological characteristics, in the muscles and viscera. Sometimes they are isolated, and sometimes two or more are apparently fused together, presenting a nodulated appearance. I saw a patient, a few weeks since, who had twenty-three of these tumors in the subcutaneous cellular tissue; and there is a case now in the house in which some twenty or more exist. Generally

they are accompanied by other syphilitic affections, and by a more or less depraved and anemic state of the system.

At first they are hard, but as they become larger they also become softer, till at last they suppurate, discharging a badly formed and offensive pus, and leaving a deeply ulcerated cavity of a very unhealthy appearance. Sometimes several years elapse before they reach this stage, even when left entirely without treatment. The ulcers left by the evacuation of the contents of gummy tumors are not disposed to take on a reparative action; on the contrary, they often enlarge, become more and more unhealthy, and, if numerous, may produce so much exhaustion as to cause the death of the patient.

Histologically, gummy tumors consist originally essentially of connective tissue. Pus corpuscles are afterward developed, and a few fat vesicles also make their appearance. The new formation does not differ materially from that deposited in syphilitic sarcocele, with the exception that in the latter pus corpuscles are very rarely formed.

Gummy tumors are formed in the viscera, but, with the exception of those which may be produced in the testicle, we have no means of recognizing their existence during life.

Osteoscopic pains are very common during the tertiary period of syphilis, though, as we have seen, not peculiar to this stage. They are due to incipient

periosteal or osteal disease, and are worse at night than in daytime, not, however, so far as my observation extends, on account of the warmth developed by the bedclothes. The bones most frequently attacked are those of the cranium, and the tibia, the clavicle, the radius, the ulna, the sternum, the inferior maxillary, and the fibula.

The pain is frequently very intense, and the least touch is sufficient to aggravate it. Ere long, through the loss of sleep and the extreme nervous irritation induced, the patient becomes thoroughly worn out,—would rather die than live in many instances. I have often had patients tell me that no other event of syphilis gave them so much discomfort and made them so weary of existence as these pains.

Periostitis and *osteo-myelitis* become fully developed in most cases if the tertiary pains in the bones are allowed to take their course, and, as results, *exostosis*, *caries*, and *necrosis* supervene.

Exostoses or *nodes* come first in order. They are due to the effusion of a substance similar in its general features to that formed in gummy tumors, from the under surface of the periosteum; or to the formation of pus in the same situation, attended with thickening of the periosteum; or to the effusion of lymph, which contains the elements of cartilage; and which are eventually connected with the bones. I have never seen any syphilitic exostosis of any kind which was attached to the bone, unless it was one formed

within the cranium. They all are developed from the periosteum, and merely rest on the bone, which generally, from having its periosteum detached, sooner or later passes into a necrosed condition. There can be no such thing as the growth of a bony exostosis, except from the periosteum or some other membrane or tissue capable of taking on its function.

Occasionally, but very rarely, exostoses are met with within the cranium, developed from the dura mater, and in intimate contact with the inner surface of the cranial bones, to which they may and generally do become attached. In these situations, the disease produces such extensive alterations in the structure of that portion of the brain in contact with it, that the disorder of the nervous system is very great, and calls for very prompt relief. Unfortunately, we can only guess at the character of the lesion. When, however, convulsions and paralysis occur in an individual with the syphilitic taint, and there is no other assignable cause, we have good reason to suspect exostosis within the cranium, and at any rate should not neglect the proper medicinal treatment.

Caries and *necrosis* generally result from the separation of the periosteum from the bone, to which it belongs, and through which its supply of blood is mainly kept up. They may, however, be the result of the deposit of the same form of matter found in the gummy tumor, in the endosteum, or marrow

giving rise to a syphilitic osteo-myelitis. The bones already mentioned as particularly liable to osteoscopic pains are those which suffer most from caries and necrosis; but no bones are exempt from their attacks. When the bones of the cranium and face are the subjects of these diseases, we are presented, in my opinion, with the most horrible phase of syphilis, and one which is capable of making the strongest impression on the mind. There are now several cases of caries and necrosis of the vomer, nasal, palatine, and cranial bones under your observation. In all of these the disease has originated through the loss of the periosteum, either through its own primarily diseased condition or from the extension of ulceration of the neighboring soft parts to its substance.

Besides the affections cited, the *skin and mucous membranes* are subject to disease during the tertiary period of syphilis. Commencing generally as tubercles, these ulcerate, and leave extensive and foul ulcers. The throat and nasal passages are especially liable to be thus affected, either by continuation and modification of secondary disease or by original outbreaks. The muscles may also become the seat of tumors, or may undergo atrophy or degeneration into a hard, fibrous tissue, incapable of ordinary contractility.

Nearly all the *viscera* are subject to the attacks of tertiary syphilis. After the testicle, the liver is perhaps most liable to disease from this cause. The

alterations which take place in its structure, as well as in that of the other viscera, are similar to those which are occasioned in the testicle through the same cause.

The *nervous system* likewise participates in the general disturbance, and convulsions of various forms, paralysis, neuralgia, etc. are produced. I shall not, however, take up more of your time with the description of the tertiary manifestations of syphilis. To consider the subject fully, would require more time than either you or I can give to it. All I set out to do was to give you certain broad principles and striking features, leaving you to obtain the details from your own observations in the wards or from the systematic treatises which are written on the subject.

In the treatment of tertiary syphilis, I think it has been too strongly inculcated that mercury is injurious, and that our reliance is to be placed exclusively on the iodide of potassium. I found most of you with this idea, and, as I believe it is one calculated to do harm, I have endeavored to eradicate it. But it is nevertheless true that iodide of potassium exerts more influence over tertiary accidents than over those of the secondary stage; and it is also true that in many cases the system has already been so saturated with mercury as to render any further exhibition of the drug inexpedient; and that the constitution has become so broken down by disease and medicine

combined, that additional mercurialization would be almost criminal. In cases, however, in which none of these objections exist, mercury is still to be relied upon as the most valuable general remedial agent known to us, though iodide of potassium is always a valuable adjunct. It is in the tertiary stage that the mercurial vapor bath can be used to more advantage than can ordinarily arise from the internal administration of the drug, because, even when the indications do not admit of the latter, the former can often be brought into service without producing any injurious result.

The iodide of potassium should be given for a long time, and in as large doses as the stomach will tolerate. I generally commence with five grains three times a day, and increase the quantity, if it can be borne, to a scruple at each dose. Even this amount may be exceeded if it is deemed advisable.

All the dietary and other hygienic measures already mentioned should be enforced.

Syphilitic sarcocoele should be treated with mercury and iodide of potassium; besides which the affected testicle should be strapped in the manner recommended in the text-books, and which you have often seen carried out for gonorrhœal orchitis. A suspensory bandage should also be made use of, as the dragging sensation caused by the enlarged organ is the chief source of uneasiness. The testicle should never

be extirpated, as the disease yields readily to the remedial measures mentioned.

Gummy tumors should be treated in the same general manner by mercury and iodide of potassium. They should be opened with the knife as soon as suppuration has commenced.

No special measures are required for the *osteoscopic pains*, which almost always yield readily to the iodide of potassium and mild mercurialization.

Exostoses are to be similarly treated. Ricord treats them locally with repeated blisters, but I prefer the tincture of iodine or the solution of this substance in glycerin, previously mentioned, (page 54.) They should not be incised, unless it is very evident that a large quantity of pus is present and is burrowing under the periosteum.

The only special treatment necessary for *caries* and *necrosis* is that applicable to those diseases proceeding from any other cause, and which is laid down in all the text-books on surgery. Loose pieces of bone should be removed at as early a stage as practicable.

The local treatment proper for *ulcerations of the mucous membranes* consists in the application of caustics and of mildly stimulating and deodorizing substances. In the first stages, and while there is any tendency to phagedena or sloughing, the former are to be used. If a mild one is required, the solid nitrate of silver may be applied; if a more powerful

one, nitric acid or the acid nitrate of mercury should be employed. As a stimulating and deodorizing wash, I know of nothing preferable to the permanganate of potassa. Chlorate of potassa may also be used with advantage.

The diseased conditions of the *internal viscera* cannot be brought under the influence of local measures, even if their existence could be positively made out during life. Where there is reason to suspect their presence, the general treatment of tertiary syphilis should be enforced. The affections of the *nervous system* also require like measures. Local neuralgia may be relieved for the time by the hypodermic injection of a solution of morphia, as previously mentioned.

There is a method, whereby, it is said, syphilis may be cured, which has obtained a good deal of notoriety in some parts of Europe, and to which in the next lecture I shall ask your attention: I refer to syphilization. This, with one or two other points, will embrace what I have to say to you relative to syphilis; and we shall then take up the subject of gonorrhœa.

LECTURE XIV.

SYPHILIZATION — HISTORY OF SYPHILIZATION — FALLACIES INVOLVED IN THE DOCTRINE OF SYPHILIZATION — EXPLANATION OF ITS EFFICACY AS A CURATIVE AGENT — INFANTILE SYPHILIS — INFLUENCE OF THE MOTHER IN CAUSING SYPHILIS IN THE FETUS — INFLUENCE OF THE FATHER — SYPHILIS ACQUIRED IN INFANTS AFTER BIRTH.

SOME twelve or fourteen years ago, a young French physician, Auzias-Turenne, laid before the Academy of Medicine of Paris the results of experiments whereby he had arrived at the conclusion that it is possible to cure and prevent syphilis, by saturating the system, as it were, with chancrous matter. His method consisted in the practice of repeated inoculations on the same person with the virus of chancres. Each inoculation, he asserted, produced a less defined chancre, and with less rapidity than the previous one, until at last a period was reached when no chancre could be thus formed. If the operation had been performed on a patient laboring under syphilis, he became cured; if upon a healthy person, he was rendered incapable of contracting a chancre, and consequently could never have syphilis.

The Academy, instead of putting Auzias-Turenne to the proof, rejected his doctrines without investiga-

tion, on the ground of their immorality, a very foolish and narrow-minded view to take, for, whether true or false, they should have been inquired into. Like all reformers or attempted reformers, Auzias-Turenne received more abuse than honor.

Less than a year afterward, however, the subject was taken up by Sperino, a physician of Turin, who, from being connected with the venereal hospital of that city, had ample opportunities for prosecuting his researches. Fifty-two prostitutes, suffering under venereal diseases, were submitted by him to experiment, and the result of his observations was extremely favorable; for he found that repeated inoculation led to complete immunity, and that secondary and tertiary manifestations of syphilis entirely disappeared under its influence. Others conducted similar courses of inquiry with like results, and at last the process reached Christiania, in Norway, where it was practiced with great ardor, and where even now it holds its headquarters, if I may judge from a monograph just published.* Dr. Boeck, of that city, and Dr. Danielsen, of Bergen, are now the recognized syphilizers of the world, and it is from them or from members of their school that we should look for the orthodox views on the subject.

* *Aperçu des différents Méthodes de Traitement employées à l'Hôpital de l'Université de Christiania contre la Syphilis Constitutionnelle*, par J. L. Bidentkap. Christiania, 1863.

According to the monograph referred to, the treatment of constitutional syphilis, which ten years since consisted in the use of mercury and iodine, is now altogether conducted by inoculations, occasionally accompanied by the administration of iodide of potassium; and tables are given of a large number of cases which exhibit the immense advantages of syphilization.

The chancrous virus is first inoculated on the sides of the thorax and on the abdomen, and when it will no longer give rise to chancres on these parts, it is inserted into the skin of the arms and legs. Six inoculations are made every three days, the matter being derived from the last successful chancres produced on the individual, and so on as long as the virus will succeed. When it fails, recourse is had to matter from another person. In from three to six months the point of non-inoculability is reached, that is, when from 180 to 360 inoculations have been performed. Patients of all ages—even infants—and with syphilis at all stages of its progress, are treated after this fashion. Bidenkap remarks, however, that it acts with more celerity in the disease in its early constitutional period.

There is a good deal more which I might say to you relative to the details of this method, but I think I have given you a sufficiently full idea of it. It has never taken root out of Turin and Norway, and, so far as I know, has scarcely been tried anywhere else, except to a limited extent in France and Germany.

Now, in regard to this process, you cannot have failed to understand that, if there is any foundation for the stories which are told of its mode of success, the views which I have endeavored to inculcate relative to the duality of the venereal poison and the non-auto-inoculability of the infecting chancre, are utterly devoid of truth. If it is possible to cure syphilis by saturating the system with the syphilitic poison derived from soft chancres, then there is only one syphilitic poison, which is found in the secretion of the one as well as the other; and if repeated chancres, or even one, can be formed in the infected individual with the matter of an indurated chancre, the virus is of course auto-inoculable. Now, let us see what facts can be brought forward to aid us in elucidating the matter.

There is no doubt but that an individual may have soft chancres time and again. M. Lindman inoculated himself successfully about 3000 times, and did not then succeed in rendering his system insusceptible. It is probable, however, that in most individuals a period would be reached, before this number of inoculations were performed, in which the system would for a time lose its receptivity to the virus. Cullerier found that repeated vesication gradually lost its effect; and finally a point was arrived at when blisters could be applied to the body without irritation being excited; and not only this, but in some cases existing constitutional syphilis was cured. Lindwurm, by repeated applications of tartar emetic ointment, also cured the disease.

My own observations and experiments have led me to results similar to those arrived at by Cullerier. I have often observed that in cases in which it was deemed advisable to keep up continued blistering, the irritant at last began to lose its power; and in one case in which I conducted a series of experiments, I found that, after sixty-one small blisters the size of a dime had been applied to different parts of the body after Boeck's method, vesication could not be produced again till thirty-two days had elapsed. I then tried like experiments on my own body, and, after having produced forty-seven vesications, each one after a longer application of the blister than the preceding one, I could cause no more for sixteen days. At the end of this period, sixteen vesications produced an immunity which lasted for over a month. Circumstances prevented me at that time from continuing the investigations.

Now, all this is in strict accordance with a well-known law of the animal economy, that the system becomes habituated to almost any influence which is brought to bear upon it for a lengthened period. The body can be educated as well as the mind, and a point reached at which a physical agent produces little or no impression after its action has been long continued or frequently repeated, just as the mind, which is shocked by the recital of some horrible tale or at the contemplation of a crime, comes at last to hear the one and regard the other without inquietude, and

perhaps even with pleasure. We see daily instances of the action of this law with almost all our remedies. Quantities must be increased, in order to produce the necessary results in patients who have taken the same medicines for a long time, and at last the article must be changed for another of similar properties. In cases of intermittent fever, for example, we often meet with instances in which the system has become saturated with quinine, and in which this drug has altogether lost its power to cure the disease. An individual can accustom himself to take large doses of arsenic, strychnia, or other poisons, without causing any marked injurious result; or can become habituated to intense heat or cold, or to the use of tobacco, alcoholic liquors, etc. There is, therefore, nothing wonderful in the fact that the system can become habituated to the virus of the soft chancre; and it may possibly be true that repeated inoculations with this virus, or the making of successive ulcers by any other irritant, will in some cases cure constitutional syphilis, by affording drains, as it were, for the escape of the peccant matters circulating in the blood.

The question now arises: What sort of virus is used in the treatment of constitutional syphilis by the so-called process of syphilization? At first, there is no doubt that Boeck used the pus of soft chancres, and even of suppurating buboes. He asserted a distinct preference for this species of virus; and Bidentkap, in the memoir already mentioned, states that no

attention whatever was paid to the source whence the matter came, the secretion of infecting and non-infecting chancres and of suppurating buboes being indiscriminately used. But he adds that, in latter years, since the doctrines of the dualists have been introduced, the matter employed has been taken from infecting chancres. And he further asserts that this matter is shown to be as inoculable as the matter taken from non-infecting chancres, and goes through as many generations, being perhaps more certain and regular in its effects. He admits, however, that it is yet too soon to judge whether its curative influence is as great as that of the matter of the soft chancre.

On the contrary, Danielsen asserts* that, of many thousand artificial chancres, he has never seen but one that was not of the soft variety, both in his own practice and in that of his colleagues, and as inoculated on every part of the body. The exception referred to is very instructive. An individual, not affected with syphilis, had been inoculated nearly four hundred times with the matter of the soft chancre, when, by some accident, the virus of an indurated chancre was used. The consequence was, that an indurated chancre was produced, and constitutional syphilis followed.

Let us now suppose that a patient who has had an indurated chancre comes into hospital suffering with

* Lectures on Syphilis, etc., by Henry Lee. London, 1863.

constitutional syphilis. You decide to treat him by syphilization. You search the wards till you find a fresh, well-marked, indurated chancre, and you inoculate the individual with its virus after Boeck's method. What will be the character of the resulting sores? It is not difficult for you to answer this question, for you have often seen such sores. They will be simple pustules, such as would follow the insertion of any irritating matter under the skin, and which heal of themselves in a few days. You can make any number of such sores with a needle dipped in a solution of nitrate of silver, and often with a perfectly clean instrument. It is impossible to inoculate such an individual so as to give him an indurated chancre, and consequently, when the attempt is made, there is no aggravation of his constitutional symptoms. He has got syphilis in the natural way, and nothing can give it to him again.

But suppose that, instead of using the secretion of an indurated, you employed that of a soft chancre. Here you will obtain results altogether different. Syphilis affords no immunity to the soft chancre, and consequently you will produce genuine soft chancres, which, as they have no disposition to heal in a few days, tend to relieve the system of the morbid matter which pervades it. They can be reinoculated over and over again without any difficulty.

This, then, is the explanation of the efficacy of syphilization, as it is incorrectly called. Whenever

a chancre has been produced upon a patient affected with constitutional syphilis, the virus of a soft chancre has been used, and the resulting sore is always of this character. As to the assertion of Bidentkap, that the virus of the infecting chancre is employed, I can only say that I do not believe it, without, of course, intending to reflect on that gentleman's veracity. The thing is altogether out of the question. I have, as you know, endeavored very many times to inoculate the virus of an infecting chancre on a syphilitic person, and never once with an affirmative result; and many other syphilologists who have entered much more deeply into the subject than myself, have never been able to succeed. How can the difference between the results obtained in this country and in France and England, and those reached in Norway, be reconciled? There is but the one explanation, and that is, that a different virus was used: that in Norway it was not the virus of infecting sores, but that of the simple, soft, non-infecting chancres; and that in the other countries the secretion of the indurated and infecting ulcers was employed. Try it for yourselves—and most of you have already done so—if you entertain any doubt, and you will soon be satisfied.

As to employing syphilization as a preventive of syphilis, there is not a word to be said in its favor. The matter of the soft chancre could not prevent it, and that of the indurated chancre would give the very disease it was intended to prevent. As a means

of cure, it is undoubtedly efficacious, but I do not see, even admitting all that is claimed for it by its advocates, that it has any advantages over the judicious use of mercury, iodine, etc.; while its attending circumstances are such as will always prevent its obtaining any firm position among a refined and very enlightened people, so long as we can cure the disease for which it is used, by less revolting means.

There are two other subjects in regard to which I wish to say a few words. These are infantile syphilis, and the possibility of communicating syphilis by vaccination and the blood and secretions of infected persons.

In regard to the first, I have nothing to communicate to you which you will not find fully and ably considered by M. Diday in his very excellent work on Infantile Syphilis, which has been translated and published by the New Sydenham Society, and which is, therefore, within the reach of all of you who do not read French. I merely, therefore, desire to mention a few points, which are of a physiological character, and which are exceedingly interesting.

An infant may contract syphilis, either by infection through the blood of its mother, through the impress given to it by the seminal fluid of its father, or by the direct absorption of virus during or after its birth.

The influence of the mother may be exerted upon the ovum before conception; and thus the foetus is

syphilitic from the inception of life; or it may not be given till after pregnancy has commenced. In the first case, the mother would have been syphilitic at the time of conception; in the second, she would not have become syphilitic till after pregnancy had taken place.

The first-mentioned mode of communication is sufficiently well established by numerous cases; and the following, which occurred in my own practice, is conclusive enough.

A woman, the wife of a soldier, came under my care with a chancre, which she had contracted from her husband. The latter died six weeks after marriage, and before he was cured of his chancre. The wife did not conceive by him; her chancre was cured; and five months after the death of her husband, and while she was still laboring under constitutional syphilis, she married again. She soon became pregnant, and in due time was delivered of a child, puny, wrinkled, and with a well-marked erythematous eruption, and which died a few hours after birth.

Many examples similar to the above are referred to by authors, and Diday quotes several in which the disease, being communicated to a nurse from a child with syphilitic sores about the mouth, and the former subsequently becoming pregnant, has given birth to a syphilitic infant.

Syphilis, contracted after pregnancy has commenced, but before it has advanced to the fourth

week, or after it has passed the seventh month, does not appear to be capable of infecting the foetus, according to Diday. With regard to the latter period there is little doubt. A mother contracting syphilis seven months after conception will not, in all probability, infect the foetus in utero; but if she contracts it within four weeks after conception, I do not see how the embryo is liable to escape. It is true that the nourishment is obtained from the albuminous substance which surrounds the ovum in the Fallopian tube, as M. Diday asserts. But this material is secreted, by the mucous membrane, from the blood of the mother, and if she is infected, the secretion is also liable to contamination. Moreover, before the vascular connection is established, the embryo is nourished by pabulum provided by the mother, which is taken up by the chorion, and which may also be infected. In addition, the vascular connection with the mother is established so soon after conception, that it would be impossible for constitutional syphilis to have been contracted and cured before this direct relation with the mother is in operation; after which, of course, the foetus receives the blood of the mother directly into its own blood-vessels.

The influence of the father in giving syphilis to the ovum is, I think, undoubted, though perhaps not so well marked nor so invariable as that of the mother. The father can only communicate the disease, at the moment of conception, through the sem-

inal fluid, which vivifies the ovum; while the blood of a syphilitic mother is constantly circulating through the system of the foetus. Nevertheless, as through the semen the father communicates to his offspring his mental, physical, and pathological characteristics, so, as one of the latter, he transmits syphilis, if he is laboring under it, or still possesses the diathesis.

Not long since a case occurred in my own practice. A gentleman was obliged to go away from home on business. Three or four days after leaving his wife he exposed himself to contagion, from which he contracted an indurated chancre. He returned, at the end of three months, with his chancre cured, but with slight manifestations of constitutional syphilis, for which he was taking the protoiodide of mercury. Within a week afterward he placed himself under my care, and requested my opinion as to the propriety of his having sexual intercourse with his wife. I strongly advised against it, and he promised to abstain, though he admitted that he had already indulged several times. I think he kept his word, and denied himself for several months, so far at least as his wife was concerned. In due time, counting from his return, his wife was delivered of a child, which in a few days exhibited unmistakable evidence of syphilitic disease, in the form of patches of erythematous eruption on the breast, which was followed by an extensive crop of papules, and inflammation of the mucous membranes

of the nostrils and mouth. The child was eventually cured by the administration of mercury. The mother remained healthy.

There are many such cases on record, and several others have come under my own observation. There can be no doubt, therefore, that a man suffering under constitutional syphilis may communicate the disease to his offspring at the moment of conception.

Even when all symptoms of the disease have disappeared, there is still danger, but of course it is less than in those cases in which syphilitic accidents are yet present. I have known many men to marry who had had constitutional syphilis and been cured, but I have only seen two or three cases in which, under such circumstances, the disease was given to the offspring. One of these occurred in New Mexico, in the instance of a merchant who had been affected with constitutional syphilis, but who for eight months had exhibited no evidences of disease. He asked my opinion about marrying, and I told him I thought he might do so with safety, both to the wife and any future offspring. The lady was an American, of good family, and of modest behavior. He married, and in the tenth month afterward his wife was delivered. The child was dead, shriveled, and yellow, though well developed; the skin came off in patches, and it was evidently a victim to syphilitic disease. The mother remained healthy, and within a year afterward had a perfectly healthy child. The father had

no evidences of disease after his marriage, though the diathesis doubtless existed at the time.

When both parents are syphilitic, the danger to the foetus is of course increased.

The child may acquire syphilis during or soon after birth. If the mother is affected with chancre, the child may become diseased by the contact of some part of its body with the virus, but this must be of very infrequent occurrence. You can all see that it is possible, but when you reflect that during labor the vagina is lubricated copiously with mucus, that the child is covered with the *vernix caseosa*, that the waters are discharged, and that after birth the child is always, in this country at least, well washed with soap and water, you must admit that such a mode of communicating a chancre cannot be very influential.

By lactation, the disease may be contracted, either by the nurse having a chancre on the nipple and giving a like sore to the child, or being affected with a secondary disease of the same region, or perhaps through the milk. The latter is doubtful, and can only be settled by further investigations. My own opinion is that syphilis may be thus transmitted from an infected nurse; but it is based solely upon analogy, and upon a consideration of the physiology of the subject.

Another matter of importance is the transmission of syphilis from the father to the mother, through the medium of the foetus. There can be no doubt of

the fact that the disease may be thus communicated. Several instances have come under my observation, and many others are cited by authors. It is upon the same principle that, after having had several children by her husband, the wife acquires more or less of his mental and physical characteristics. With every impregnation, the blood of the foetus, bearing the impress received from the seminal fluid of the father, circulates through the mother and modifies her organism. It is thus that a woman is so influenced, after having had several children by a first husband, as that those begotten by a second husband resemble the first. That the mother may be poisoned by the foetus is not a matter of dispute, and has been settled by actual experiment upon the lower animals by Mr. Savory and others; but whether the mother may be infected through the ovary, which has furnished the diseased ovum, is still an undetermined point.

Tertiary syphilis is not difficult of recognition in infants, when the history of the child and the antecedent and attendant phenomena are carefully inquired into. According to Mr. Hutchinson,* the most reliable symptom is the state of the permanent teeth, the central upper incisors being usually short and narrow,

* *Medical Times and Gazette*, Sept. 11, 1858. Also, *A Clinical Memoir on Certain Diseases of the Eye and Ear consequent on Inherited Syphilis*. London, 1863, p. 204.

with a broad vertical notch in their edges, and their corners rounded off. Dr. Bumstead, however, in his excellent work on Venereal Diseases, is disposed to the opinion that this peculiarity of the teeth is due to general cachexia, other than that which is syphilitic; and my observations incline me to the same opinion. I have repeatedly seen it in cases which did not present the least evidence of being syphilitic. While, therefore, I am not disposed to go as far as Mr. Hutchinson in regarding this condition of the teeth as pathognomonic, I deem its existence as indicating a depraved state of the system, and as calling for inquiry by the surgeon as to its cause. The subject is one which is well worthy of further investigation.

LECTURE XV.

TRANSMISSIBILITY OF SYPHILIS THROUGH THE BLOOD—PELIZZARI'S EXPERIMENTS—VIENNOIS'S INVESTIGATIONS RELATIVE TO THE COMMUNICATION OF SYPHILIS BY VACCINATION—THE REVALTA EPIDEMIC—THE LUPARA EPIDEMIC—RICORD'S VIEW—INOCULABILITY OF THE SECRETIONS OF INFECTED PERSONS.

THE transmissibility of constitutional syphilis by direct inoculation with the secretions of secondary sores may be regarded as sufficiently proven by the numerous cases of natural inoculation which have occurred, as well as by the experiments of Waller, Rinecker, Gibert and others, in which the matter of such sores was introduced directly into the blood of healthy persons, who subsequently became the subjects of syphilitic disease therefrom.

Facts are not wanting also to show that the blood of persons affected with syphilis is, when inoculated on healthy subjects, capable of giving rise to syphilitic disease, and as this matter is important in several aspects, I propose to devote a little time to its consideration.

Diday endeavored to inoculate the blood of syphilitic subjects. Eighteen experiments were made, all of which were unsuccessful.

Waller made a similar attempt, and with success.

He employed the blood of an individual affected with secondary syphilis, and brought it in contact with the incisions made by a scarificator on the body of a boy fifteen years old, who had never had any syphilitic disease. In thirty-four days two tubercles appeared, which ulcerated, and thirty-two days subsequently a well-defined syphilitic erythematous eruption came out on the abdomen, chest, back, and both thighs. The eruption became still further developed into papules.

A surgeon of the Palatinate, who has not given his name, made nine attempts to inoculate the blood of syphilitic patients on healthy individuals, three of which were successful. He made the skin capable of absorbing it readily by rubbing off the epidermis from an extensive surface and applying the blood to it.

But the best conducted experiments were those performed in 1860 by Professor Pelizzari,* of Italy. This physician inoculated two medical students with the blood of a syphilitic patient with a negative result. On the 6th of February, 1862, he resumed his experiments, three physicians, Drs. Bargioni, Rosi, and Passagli submitting themselves to his investigations. The blood of a female patient, aged twenty-five, affected with constitutional syphilis, and who had undergone no treatment, was used for the purpose. The blood was drawn, with a new lancet,

* Lectures on Syphilis, etc., by Henry Lee, 1863, p. 198.

from the cephalic vein. The patient was at the time affected with mucous papules on the left labium, at the place where the chancre had existed; mucous tubercles surrounded the anus, and the inguinal glands were indurated and enlarged. A confluent syphilitic eruption existed upon the body, the posterior cervical glands were enlarged, and there were pustules on the head. At the point on the arm from which the blood was drawn there was no sign of any eruption, the skin of the part was well washed, and the surgeon washed his own hands. The bandage was new, as was also the vessel in which the blood was received. As the blood escaped from the cephalic vein, some of it was received on a piece of lint, which was placed on the upper part of Dr. Bargioni's arm, where the epidermis had previously been removed, and three transverse incisions made. A similar operation was performed on the other two gentlemen, but in the case of one the blood was cold, and in that of the other it had coagulated.

After twenty-four hours the dressings were removed, and nothing was observed but the crusts formed by the effused blood. Four days afterward all traces of the inoculations had disappeared.

On the morning of the third of March, Dr. Bargioni informed Prof. Pelizzari that in the center of the inoculated surface he had noticed a slight elevation, which produced a little itching. The arm was examined, and at the point indicated Prof. Pelizzari

found a small papule of a roundish form, and of a dull-red color. On the eighth day the papule had augmented to the size of a twenty-centime piece. On the eleventh day it was covered with a very thin adherent scale, which became denser, and on the second day commenced to crack in its central part. On the fourteenth day two axillary glands became enlarged to the size of nuts. The papule remained indolent, and there was no induration at its base. On the twenty-first the scale was transferred into a true crust, and the part beneath was ulcerating. Slight induration was more evident. On the twenty-second the crust was detached, leaving a funnel-shaped ulcer, with elastic and resistant borders, forming an annular induration. There was but a small amount of secretion from the sore, and the pain was trifling. On the twenty-sixth the ulcer had become as large as a fifty-centime piece, and the surrounding induration was considerably increased. Up to the fourth of April the ulcer remained stationary, but at that date its base appeared to be granulating. The axillary glands remained swollen, hard, and indolent. Slight nocturnal pains occurred in the head about this time, and the posterior cervical glands became somewhat enlarged. On the twelfth of April spots of an irregular form and of rose color appeared on the surface of the body. The eruption extended itself, and during the succeeding days became more confluent. No constitutional disturbance, heat of skin, or pruritus

accompanied it. On the twentieth the cervical glands had increased in size and were harder. The chancre maintained its specific character and exhibited no tendency to cicatrization. On the twenty-second the color of the eruption was decidedly coppery. Small lenticular papules were now perceived to be mixed with the erythema. The edges of the chancre had begun to granulate. Mercury was now administered.

This case is of itself sufficient to prove the inoculability of syphilis through the blood of an infected person. But the evidence does not stop here.

In a very interesting memoir, M. Viennois* has collected many cases of the transmission of syphilis by vaccination, and has summed up his conclusions from the data on hand. From his observations and researches it would appear that syphilis cannot be communicated by vaccine virus taken from a subject affected with the disease unless a portion of the blood of the individual is also inoculated. Thus he says:—

“When the vaccine virus of a syphilitic subject, pure and unmixed with blood, is inoculated on a healthy individual, a simple vaccine pustule is obtained, without any near or remote syphilitic complications being produced.

“On the contrary, if, with the vaccine virus of a

* De la Transmission de la Syphilis par la Vaccination. Archiv. Gen. de Méd., Juin, Juillet, et Septembre, 1860.

syphilitic individual who either has or has not at the time constitutional accidents, a healthy person is vaccinated, and the point of the lancet be charged with a little blood at the same time as with the vaccine virus, both diseases may be transmitted by the one operation—the vaccine disease with the vaccine virus, and syphilis with the syphilitic disease.”

M. Viennois also concludes that in such cases the vaccine vesicle is developed first, and that after undergoing its incubatory period the syphilitic ulcer, with all the characteristics of a true chancre, appears.

These views of M. Viennois have recently received the most ample confirmation from the tragedy which occurred at Rivalta, in Italy, by which forty-six children and twenty nurses had syphilis communicated to them through vaccination, and of which several of the children died. The full details of this remarkable event are given in a memoir by Dr. Pacchiotti,* of Turin, and I condense the following summary from his report.

On the twenty-first of May, 1861, Sig. Cagiola vaccinated Giovanni Chiabrera with lymph contained in a tube sent from Acqui. The operation was performed in the usual manner and with a perfectly clean lancet. The child was eleven months old, and in good health at the time. Forty-six other children

* Sifilide trasmessa per Mezzo della Vaccinazione in Rivalta, presso Acqui. *Gazzetta della Associazione Med.*, Ottobre 20, 1861.

were, ten days subsequently, vaccinated with lymph taken from the vesicle of this child; and ten days after this, seventeen children were vaccinated with lymph taken from the arm of Luigia Manzone, one of the forty-six first vaccinated.

Of these sixty-three children, forty-six—thirty-nine of the first lot and seven of the last—were within two months attacked with syphilis. On the seventh of October seven of them, including the little Manzone, were dead, three were yet in danger of dying, fourteen were recovering under the use of mercury and iodine, and one was well.

A medical commission was now appointed to inquire into all the circumstances connected with this fatal event, and they proceeded to the execution of the duty assigned them.

Twenty-three children were examined in full; the others were not so accurately noticed, as their parents had neglected to avail themselves of medical aid in time. In the forty-six children who were affected, syphilis appeared at periods varying from ten days to two months after vaccination, the average time being twenty days. The initiatory symptoms were variable. Sometimes just as the vaccine vesicle had healed, it became surrounded with a red, livid, and copper-colored areola, and ulcerated again. In other instances an ulcer would form on the cicatrix, and become covered with a scab, which in a few days would fall off to make room for another, and so on.

In others the vaccine vesicles had an unhealthy appearance from the first, and were accompanied by a general eruption.

The principal symptoms observed by the commission were mucous tubercles in the vicinity of the anus and on the genitals, ulcerations of the mucous membrane of the lips and fauces, engorgement of the lymphatic glands in the groin and neck, syphilitic skin diseases, alopecia, deep tubercles, gummy tumors, etc.

In two subsequent papers, Dr. Pacchiotti* continues the detail of his investigations. On the eighth of February, twenty of the mothers or nurses of the forty-six children had become affected with symptoms of syphilis. He ascertained, too, from a revaccination of five of the children, that the occurrence of syphilis had not destroyed the efficacy of the first vaccination. But he also discovered the source of the infection. It appeared that a year and a half previously a young unmarried woman had had syphilis, and that she was syphilitic at the time Chiabrera was vaccinated. This woman was the mother of a child which had died syphilitic three months after its birth. After the death of the child she was in the habit of having her breasts drawn by the little Chiabrera, and gave him the clothes which her own child had worn. Another child nursed by this woman, but who was

* L'Union Medicale, Fev. 8ème et Avril 3ème, 1862.

not vaccinated, also became syphilitic, and this child infected its mother just as little Chiabrera did his mother. It is therefore shown that the vaccine virus used on Chiabrera was not at fault, but that all the other forty-five children were infected through the lymph taken from his arm. It is also shown that blood was on the lancet when several of the children were vaccinated.

Dr. Pacchiotti, as the results of his investigations and those of the commission, gives the following rules to be observed in vaccinating:—

1st. Examine the child from whom the lymph is taken.

2d. Inquire into the state of the parents' health.

3d. Take the lymph in preference from those children who have passed the fourth or fifth month, as hereditary syphilis appears in general before that time.

4th. Do not use lymph taken from a vesicle which has passed its eighth day, because on the ninth and tenth days the lymph becomes mixed with pus, which latter may be of an infectious character.

5th. In taking the lymph, avoid hemorrhage, as there is less danger with lymph free from blood.

6th. Do not vaccinate too many children with the same lymph.

In consequence of the publication of the details of the lamentable affair at Rivalta, Dr. Marone concluded to relate the particulars of a similar event

which occurred to him, and in regard to which he had thought it advisable to maintain a discreet silence. The particulars are given with sufficient fullness by Mr. Lee, whose excellent work I have already referred to several times.

It seems that in November, 1856, Dr. Marone obtained some vaccine lymph, with which he vaccinated a number of children at Lupara. The lymph was contained in glass tubes, and Dr. Marone noticed that it was mixed with a little blood, which affected its transparency. Of the number of children vaccinated with this lymph notes were preserved in twenty-three cases. All these were affected with syphilis, and the disease likewise manifested itself among the mothers, nurses, and even the servants who were brought in contact with them. The symptoms with which the children were affected consisted chiefly of eruptions of a syphilitic character, and subsequently of mucous tubercles at the angles of the lips, around the anus, and on the vulva. The post-cervical and inguinal glands were enlarged, and there was emaciation, in degree varying with the severity of the syphilitic symptoms.

Besides these cases, eleven nurses of the number who suckled these children gave the disease to eleven other children who were not vaccinated.

In some of the cases the syphilitic phenomena continued till April, 1859.

Dr. Marone draws the following conclusions from his experience:—

"That the syphilitic virus was really transmitted in the above recorded cases by means of vaccination.

"That the children vaccinated suffered first, and became the means of transmitting the disease to others.

"That the lymph used for the purpose of vaccination was impure, being mixed with blood, and that the result shows how necessary it is to abstain from using lymph of that description."

And yet, in spite of all the evidence afforded by these and many other cases to which I have not even referred, but which are well established and vouched for, we find M. Ricord asserting, in his lectures on the subject delivered at the Hôtel Dieu, that there need be no apprehension of the transmission of syphilis by vaccination until some more positive facts are recorded in its favor. What degree of positivism would satisfy M. Ricord after such proof as he has already had, is difficult to imagine. Cases have occurred in which syphilis has been transmitted by means of teeth removed from syphilitic persons and inserted into the jaws of those who were healthy. Hunter has related two such cases, and Dr. Watson has referred to another. An eminent dentist mentioned to me a short time since that he had been the means in one instance of transmitting the disease in this manner. In all such cases it is doubtless through the blood contained in the tooth and attached to it that infection is conveyed.

Petry states that nine persons who were tattooed by a discharged soldier were subsequently attacked by the characteristic symptoms of syphilis. The local affection, which was situated at the point where the tattooing had been performed, was the indurated chancre, and the constitutional symptoms were sore throat, eruptions, enlargement of the lymphatic glands, mucous patches, etc. There can scarcely be a reasonable doubt that the instrument had previously been used on a person who was syphilitic, though there is not the same certainty as in the cases which have been previously mentioned.

It may therefore, I think, be considered as definitely established, that the blood of syphilitic subjects, when inoculated on healthy persons, may give rise to syphilis, and that this disease may be communicated, in the manner stated, by vaccination. The practical importance of this last fact should not be overlooked, and can scarcely be overestimated. It should lead to the utmost care being practiced, both as regards the source of the lymph and the manner of performing the operation.

In regard to the possibility of communicating syphilis through the physiological secretions of the infected person, no doubt can exist relative to the semen in its influence on the ovum, and there is some evidence to show that the milk may also become contaminated. I am disposed, however, to think that the secretions of syphilitic patients are not capable of

inducing syphilis, either when naturally or artificially inoculated, unless it may be the milk, which contains all the elements of the blood, and upon the secretion of which so much vital force is expended. The semen of an individual suffering under constitutional syphilis has never, to my knowledge, been the means of contagion to the female, except through the medium of the ovum. Here it acts just as it does when, through it, scrofula and other morbid diatheses are transmitted, or as any peculiarity of the father is communicated to the offspring. Without ever having made the experiment, I feel very sure that direct inoculations with the semen of a syphilitic person would lead to negative results.

Neither do I find any evidence to show that the vaginal secretions of a woman affected with constitutional syphilis are capable of giving any syphilitic disease to a man having sexual intercourse with her. If such a thing took place, we should have numerous examples of it. The cases cited by Dr. Marston and quoted by Mr. Lee admit of another and more reasonable interpretation. I shall probably return to them when we come to the consideration of gonorrhœa.

LECTURE XVI.

GONORRHOEA—TWO FORMS OF GONORRHOEA—BOTH CAUSED ORIGINALLY BY CHANCROUS MATTER—VIEWS OF VARIOUS AUTHORS ON THE SUBJECT—STATEMENT OF AUTHOR'S OWN VIEWS—CASES IN SUPPORT OF CHANCROUS ORIGIN OF GONORRHOEA, ETC.

In the next place, we have the subject of gonorrhœa to consider, and we will find fully as much difference in regard to its pathology as we found in that of chancre and syphilis. We need not detain ourselves with the ordinary philological discussion in regard to the term. Though the name is a bad one, and does not express the essential character of the disease it stands for, it is well understood that it is not applied to a flow of semen, but to a muco-puriform discharge from the urethra of the male or vagina of the female, and which is occasionally met with as coming from other canals or surfaces covered with mucous membrane.

Gonorrhœa has been known from the very earliest historical period, and is distinctly mentioned by the author of Leviticus.

As I told you in the first lecture, I recognize two forms of specific gonorrhœa: the one proceeding from the action of the secretion of an indurated chancre on a mucous surface, the other from the action of the

pus of a soft chancre on such a surface. These are the *sources of origin* of contagious gonorrhœa, not the only sources of *infection*; for an individual who has contracted the disease primarily from chancrous matter, is also capable of communicating the disease, though in a less virulent form, to others, and so on. Simple inflammation of the urethra or vagina, attended with a puriform discharge, and caused by irritants, injuries, etc., is not included under the head of gonorrhœa, which term is restricted solely to the virulent contagious diseases which will be fully described hereafter.

The opinion that gonorrhœa is primarily due to the deposit of chancrous virus on a mucous surface, is not held at the present day by many writers on venereal diseases; and by no one, so far as I know, in the form in which I have stated it. It is due, therefore, to myself and to you that, in enunciating a view so radically different from that generally received, I should set forth at length the reasons which have induced me to embrace it. If they are not satisfactory to you, of course you will be unconvinced, but the time will, I trust, not be unprofitably spent in any event.

Previous to the publication of Hunter's treatise on venereal diseases, the opinion was very generally held that gonorrhœa and syphilis were different manifestations of one disease. Hunter did much to confirm this view. He asserted "that the matter of a gonor-

rhoea will produce either a gonorrhoea, a chancre, or the lues venerea, (constitutional syphilis;) and the matter of a chancre will also produce either a gonorrhoea, a chancre, or the lues venerea." The difference in the results he thought depended upon the character of the tissue upon which the matter was deposited. Chancrous matter, placed on a secreting mucous surface, always gave rise to gonorrhoea; while to produce a chancre, a solution of continuity was necessary. Hunter then held to the opinion that there was but one venereal virus, from which both chancre and gonorrhoea originated. He gives several cases which appear to substantiate this view, and subsequently relates the details of an experiment which he performed upon himself. He made two punctures on the penis with a lancet dipped in the matter of gonorrhoea. Indurated chancres were produced, which were followed by symptoms of constitutional infection. It was three years before he was entirely cured.

Harrison deposited pus from a chancre on the mucous membrane of the urethra, and produced a true gonorrhoea. Andrée reported the case of a surgeon who inoculated himself with the matter of a gonorrhoea and produced a chancre; and Hernandez, who wrote a work on the non-identity of the gonorrhoeal and syphilitic virus, admitted that some of the inoculations which he performed with gonorrhoeal matter on criminals produced ulcers which had all the syphilitic characteristics, which were followed by skin dis-

eases, and for which the administration of mercury was necessary to effect the cure. Other evidence might be brought forward in support of this view, but I pass it by, as it must be admitted that, until within the last few years, observations and experiments on the subject were not characterized by much accuracy. At the present time, the doctrine that gonorrhœa may be due to syphilitic poison is held, with more or less modification, by Vidal, Wilson, Parker, L. V. Lagneau, Auzias-Turenne, and others, whose observations we will more particularly notice hereafter.

On the other hand, Benjamin Bell combated this view, and in his work on Venereal Diseases gives the particulars of experiments which were made under his observation. The subjects were medical students. In one of them, matter was taken from a chancre on the glans penis and introduced far into the urethra. At the end of eight days a chancre was discovered by dilating the urethra. Buboës were subsequently produced, and another chancre made its appearance in the urethra, but at no time was there any discharge.

Experiments were then made with the matter of gonorrhœa, which was placed between the prepuce and glans, but no chancre was ever produced.

Others were made with the matter of gonorrhœa and that of chancre, but each caused the disease peculiar to it.

In the majority of Hernandez's experiments the results were in accordance with his view of the non-identity of the two poisons. And several other observers have arrived at the same conclusions.

No researches on this subject have, however, attracted so much attention as those of M. Ricord. This distinguished syphilologist, while admitting all the facts brought forward by Hunter and others relative to the production of chancre by the matter of gonorrhœa, explains them by asserting the existence in each case of a deep-seated chancre of the urethra in connection with the gonorrhœa; and that hence the matter used was not purely gonorrhœal, but also chancrous. Likewise, in all those instances in which constitutional syphilis has followed gonorrhœa, M. Ricord believes an undiscovered chancre to have existed.

Now, in regard to the deep-seated urethral chancre, I have already told you I do not believe in it; and the specimens which Ricord presented to the Academy of Medicine were not so undoubted in their character as to be taken for urethral chancres by all who saw them. Velpeau and Vidal, both competent observers, the latter especially, denied their chancrous nature. I do not mean to be understood as saying that, if the matter of a chancre were placed far back in the urethra, under favorable circumstances a chancre would not be produced; I only say that I cannot conceive how, in ordinary connection, it can get

there; and that I have never seen a case in which any such deep-seated chancre existed. I have seen them as far back as the fossa navicularis extends; and in all such cases have been able to detect them, not only by the sight, but by the touch. Without, therefore, denying the possibility of their occurrence, I must express my belief that you will never meet with them; and, as we shall see hereafter, even admitting that they do occur, there are instances on record of constitutional infection following gonorrhœa, in which neither they nor any other kind of chancres were present.

And now, after this brief *resumé*, allow me to state more explicitly my own views. They are as follows.

1st. That the virus of an infecting chancre, when deposited upon a secreting mucous surface, may give rise to an inflammation of that surface, attended with a muco-purulent discharge, without a chancre being necessarily formed, unless an abrasion exists; in which case, if the chancrous virus comes in contact with it, a chancre will in all probability be produced, and will coexist with the general inflammation.

2d. That the affection thus produced by the virus of the infecting chancre is a syphilitic gonorrhœa; that it is followed by constitutional manifestations, and is contagious; and that, though the local disease will disappear without specific treatment, the general symptoms are more efficaciously treated with mercury.

3d. That the virus of a soft, non-infecting chancre, when deposited on a secreting mucous surface upon which there is no abrasion, generally gives rise to a muco-purulent discharge without the necessary production of a chancre; that if there be an abrasion, the liability to chancre is much increased; that both diseases may exist in one individual; and that the discharge from the inflamed mucous membrane is capable of giving rise to a similar discharge in other persons; and that it is not followed by any specific constitutional symptoms.

4th. That the two sources named are the only ones from which a contagious gonorrhœa can *originate*, though it may be *transmitted*, according to its kind, from one individual to another.

5th. That there are thus two species of virulent gonorrhœa corresponding to the two species of chancre; that both are contagious; but that only that due to the virus of the infecting chancre is followed by constitutional infection, or can give rise to syphilis by inoculation.

6th. That the matter of each of these species of gonorrhœa will, when inoculated, give rise to its own particular form of chancre; but that greater care and longer contact are necessary than are required with the virus direct from the chancre.

7th. That the muco-purulent discharges from the urethra or vagina, due to inflammation or irritation caused by stimulating food, excess of venery, acrid

applications, the introduction of instruments, injuries, ascarides, etc., are not contagious, and are simply cases of urethritis or vaginitis, in nowise possessed of any specific characteristics.

Such are the views which I hold relative to gonorrhœa. I entertain them merely because I think there is evidence in their favor of a stronger character than any which has come to my knowledge in support of other theories. Whenever I am satisfied of their incorrectness I shall renounce them, and that, too, without the slightest regret; and I do not ask you to accept one of them unless you think the evidence sufficient to warrant you in so doing. This evidence I am now going to submit to you.

Many cases of gonorrhœa have been observed in which there has been no reason to suspect the existence of a chancre. Without going back to the older authors, whose observations, as I have said, lack accuracy, it will be sufficient to refer to instances which have occurred in the practice of medical men of the present day.

Wilson* relates the following case:—

“In 1828 a medical man had gonorrhœa, but neither excoriation nor sore. In the following year, after getting wet, he was attacked with rheumatic fever, eruption on the skin, and iritis. Ten years afterward he again suffered from gonorrhœa.

* On Syphilis, Constitutional and Hereditary, etc. Philadelphia, 1852, p. 53.

"In 1840 he was annoyed with nocturnal pains in the tibiæ; for these he took vapor baths, which brought out an eruption on the skin; and with the latter he has been troubled from that time to the present.

"In the month of May, 1850, he consulted me for an eruption on the face of small, soft, syphilitic tubercles. One of the tubercles was situated on the upper eyelid; two or three occupied the ala of the nose on one side; a small cluster was collected on the lower jaw amid the hair of the whisker, and there was one on the hard palate.

"I select this case, as being that of a man well able to judge of his own symptoms, and to form a clear idea of the nature of his ailment. He told me that he felt convinced that he could not have had a chancre in the urethra."

It will doubtless be alleged that in this instance there was a concealed indurated chancre somewhere; but in such a case, we should probably have had some mention of the presence of buboes, which must have accompanied it.

Parker, while contending for a marked distinction between gonorrhœa and chancre, in which I most certainly agree with him, says:—*

"Yet, with all this, there do occur, from time to time, cases of secondary syphilis, in no way to be

* The Modern Treatment of Syphilitic Diseases, etc., p. 62.

distinguished from those which succeed the chancre, which own as their source and origin discharges from the urethra only, which discharges apparently in no way differ from common gonorrhœa; and, on examination of the urethra after the disappearance of such discharges, no vestiges of contraction or stricture or any condition incompatible with a healthy organization can be detected; surely, if a concealed or urethral chancre (which is evident enough, in most cases where it exists) had been present in such instances, its healing must have left some mark behind. I do not deny the existence of urethral chancre. I have seen it frequently; but I say that, in all the class of cases I have alluded to, the existence of chancre has been presumed, not demonstrated."

And again:—

"Two classes of constitutional diseases or secondary symptoms, properly so called, succeed to discharges from the urethra, which resemble gonorrhœa. The first are acute, and succeed to the quick suppression of a free discharge; the second are chronic, and resemble the ordinary forms of secondary syphilis generally. The following case illustrates the first-mentioned affection:—

"A very healthy young man contracted gonorrhœa, which was marked by profuse discharge. He consulted a druggist, who prescribed for him an injection, which he used very freely, and dried up the discharge. Soon after its suppression a bubo formed

in the right groin, and its appearance was succeeded by an eruption of red blotches over the whole body, and superficial redness of the fauces. At this period I was consulted. The skin disease was an acute syphilitic roseola; the redness died away into a marked copper-colored mottling."

I might quote many similar cases from the works of Wallace, Cazenave, Coote, and others, tending to show that secondary symptoms do occasionally follow gonorrhoea; but the above are sufficient for my present purpose, which is merely to show you that, heretofore, instances have occurred, which have at least been sufficient to excite doubts in the minds of those who do not believe that the virus of a chancre will cause a gonorrhoea without chancre. Now, Ricord and his followers have a ready answer to all arguments based on such cases. They say, "all that is proved is that there has been a chancre which was not detected." To this I say, that a urethral chancre is not difficult of detection; and that when it exists, and is of the infecting variety, it is always accompanied by the indurated bubo, an accident which does not ordinarily occur in cases of syphilitic gonorrhoea in which there is no chancre. But before proceeding further with the argument, I will bring before you the main points of my own observations and experiments on this subject.

When I was stationed in New Mexico, in the years 1849, 1850, 1851, and 1852, I observed, both in sol-

diers and citizens, a number of cases of urethral discharge, which were followed by constitutional affections very similar in their general character to those ensuing on primary syphilitic disease. This was before Bassereau's discovery of the distinction between the infecting and the non-infecting chancres. Coinciding with Ricord in his views relative to the impossibility of communicating chancre with the matter of gonorrhœa, and *vice versa*, I occasionally inoculated the patients with the matter of their own urethral discharges. Now, if the discharge was due to an infecting chancre, of course all such inoculations would prove abortive; if due to a non-infecting chancre, a chancre should have been produced. These facts I was not then aware of. All my inoculations, performed in the ordinary way, on the affected individuals, failed; and I was confirmed in the opinion that gonorrhœa had no connection whatever with syphilis. But the following case unsettled my views, and I was led to doubt:—

P. A., a private of Company K, 2d U. S. Dragoons, entered hospital at Cebolleta, New Mexico, July 2d, 1851, with gonorrhœa. The discharge had existed some six or eight days, and had occurred on the seventh day after connection. There was not much pain or uneasiness, though the discharge was profuse. There were no swellings in the groins, and no pain on pressure along the course of the urethra. On examination of the canal with an ear speculum, which

I was in the habit of using for the purpose, no ulceration could be detected. Before subjecting him to treatment, I took a little of the discharge on the point of a lancet, which I used that morning for the first time—it being brought from the store-room by the hospital steward, in consequence of the one I had been using having been broken—and inoculated him on the inside of the thigh. The steward, who had seen me perform the operation several times without any result following, offered himself as an additional subject of experiment, and I inoculated him with some of the same discharge on the inside of his thigh. A. was then subjected to treatment with balsam copaiabæ and mild injections of nitrate of silver. No pustule was produced on him; but on the ninth day after the inoculation, the hospital steward called my attention to a small pustule which had formed on himself at the point of inoculation, and which he had first noticed on the preceding day. On the tenth day, the summit of this pustule ulcerated, leaving a deep ulcer with a well-marked indurated base. The ulcer was excavated, and covered with a grayish exudation. I gave a weak solution of tannin as a wash, but prescribed no other treatment. On the twelfth day, I detected a chain of indurated glands in the groin of the corresponding side with the ulcer. These enlarged till they became of the size of musket balls, but remained hard and indolent. The case progressed

favorably, and within a month the ulcer was cured. The glands in the groin were, however, still indurated.

As soon as the ulcer was produced in the steward, I questioned A. closely in regard to the source of his infection, and finally succeeded in discovering from whom he had contracted his disease. The woman was a Mexican, and considered respectable. I went to see her, and for a pecuniary consideration was allowed the privilege of an examination. I employed the speculum, and found the vagina inflamed and secreting a profuse muco-purulent matter, the pus greatly predominating. There was no ulceration or abrasion to be found anywhere. I syringed the canal carefully with soap and water, and repeated my examination. I saw the whole vaginal surface, the mouth of the womb, and the urethra for half an inch or more. There was no sign of a chancre. I examined the external parts thoroughly, and did not even overlook the anus; but there was no ulceration of any kind, nor any buboes. I then questioned her, and ascertained that she had been affected for some three weeks, the disease having appeared a few days before A. had had connection with her; that it was the first venereal affection she had ever had; and that she had not undergone treatment of any kind. On pushing my inquiries, I ascertained that she had contracted the disease from her husband, and that it

was out of revenge against him for giving it to her that she had allowed A. to have connection with her.

I next went to the husband, and continued my researches. I had no difficulty with him. He at once admitted that he was diseased on my telling him he looked as if he was, and allowed me to examine him. I found an indurated chancre on the prepuce near the frænum, and indurated buboes. There was no urethral discharge, nor had there been. The chancre had existed nearly four weeks.

I then examined A. again, both with the speculum and by feeling along the course of the urethra, but there was no tenderness at any point. I introduced a bougie, and felt carefully with it for any roughness, but there was none. It passed easily into the bladder without causing pain.

At the end of the sixth week after his entrance he left the hospital, to all appearance cured.

But, from the time the ulcer was produced on the hospital steward, I kept all the parties involved under my observation.

Secondary symptoms appeared first in the husband of the woman. They came on about two weeks after I saw him, and consisted of an erythematous eruption, pains in the limbs, and alopecia.

The next one attacked was the steward. He had well-marked syphilitic fever about a week after the chancre healed. This continued four days, and was

followed immediately by an erythematous eruption over the surface of the breast, abdomen, and limbs. This lasted several weeks, when, under the influence of mercury, it disappeared. Subsequently, however, he had deep ulcers of the throat and neuralgic pains in the head. He was cured only after treatment with mercury, which lasted nearly eight months.

Private A. returned to the hospital, on the fifteenth of September, with an erythematous eruption and sore-throat. He had no other symptoms of constitutional infection, and on the twenty-fifth of October, after the garrison was removed to Laguna, he was discharged cured. The treatment consisted of the protoiodide of mercury internally, and solution of nitrate of silver to the throat. He had no other symptoms while he continued under my observation, some six months longer.

I examined the woman several times subsequently, and cured the vaginal inflammation readily with weak nitrate of silver injections. She was the last one to give evidence of general infection. She lost her hair, and had syphilitic ulcers of the throat during the third month after I saw her. Subsequently she had severe pains in the legs and condylomata around the labia. In the eighth month I saw her again for a short time. She had then a lichenous eruption on the forehead and breast. These symptoms, however, disappeared slowly under

the use of mercury; and when I saw her for the last time, in the summer of 1852, she was apparently free from disease.

But this is not all. Before placing the woman under treatment for her gonorrhœa, I took some of the pus from the vagina on the point of a perfectly clean lancet and inoculated her with it. On the same day I inoculated a Mexican whom I was treating for gonorrhœa, and another who was in perfect health, with the same discharge. The one with the gonorrhœa had been affected several months, but there were no buboes nor any other symptoms of constitutional trouble. The inoculation on the woman proved abortive. That on the gonorrhœal patient took effect, resulting, on the twelfth day, in a pustule, which became an indurated chancre, and was followed by well-marked constitutional symptoms. That in the other also resulted affirmatively, a pustule appearing on the fifth day, from which an indurated chancre was produced. In both cases the glands in the groin became enlarged and indurated, but did not suppurate. I do not know whether the second man had secondary symptoms or not, as he left the place within a month after the inoculation.

I do not see how it is possible to avoid arriving at the conclusion that one and the same poison produced all the phenomena which were witnessed in these six persons. Let me place the facts systematically before you.

1. The husband contracts an indurated chancre, which is followed by syphilis.

2. He communicates a gonorrhoea to his wife, but no chancre; and she also has constitutional syphilis.

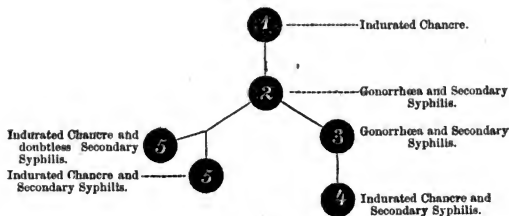
3. She has connection with another man and gives him a gonorrhoea, but no chancre; and he also has secondary syphilis.

4. A portion of the urethral discharge of this man, inoculated on a perfectly healthy person, causes an indurated chancre and secondary syphilis.

5. Two other men, inoculated with the vaginal discharge of the woman, also have indurated chancres produced at the inoculated points, and one certainly has consecutive symptoms.

This diagram, which I have drawn upon the black-board, places the whole matter before you at a glance.

Fig. 7.



I do not think a more conclusive chain of evidence could be presented. It may be said, of course, that the woman had a chancre, which was overlooked, and that Private A. also had a urethral chancre, which

was not detected. I ask no person to accept the conclusions drawn unless the facts are satisfactory. I am very slow myself to believe, and do not wish any one to accept my views unless they are convincing; and I prefer that, before believing them, he should submit them to the tests of observation and experiment. I am perfectly satisfied that neither the woman nor Private A. had a chancre. That there is a possibility they both did have indurated chancres, I admit, upon precisely the same principle that I admit the fallibility of all human evidence. Upon the same principle—and no stretching of it either—I might doubt my own existence. The evidence is satisfactory to me. Others must take it for what they think it is worth.

But, besides the fact that no chancres could be detected in either the woman or Private A., it must not be forgotten that neither had indurated buboes. At the present day, we know that the indurated chancre is always accompanied by the indurated bubo. The case, therefore, is rendered doubly strong against the existence of chancre. As will be shown hereafter, the virus of an indurated chancre, deposited upon a secreting mucous surface on which there is no abrasion, does not generally give rise to bubo; and when it does, the swelling is not of the indurated kind. Therefore, there were none when the gonorrhœa alone was present.

We also see the value of Ricord's experiments in

inoculating the affected individual with gonorrhœal matter. If it came from a gonorrhœa caused by the pus of an infecting chancre, of course it could not be inoculated upon him; if from the gonorrhœa caused by a non-indurated chancre, we shall see hereafter why the results were negative.

In the next lecture we shall resume this subject.

LECTURE XVII.

CASES OF INDURATED CHANCRE AND SYPHILITIC GONORRHOEA FOLLOWING CONNECTION WITH A WOMAN AFFECTED WITH INDURATED CHANCRE—CASE OF SYPHILITIC GONORRHOEA CAUSED BY THE VIRUS OF AN INFECTING CHANCRE—REMARKS—CONCLUSIONS.

AFTER the cases which have been detailed to you came under my observation, my attention was directed to the subject with more care than before, and I continued my investigations. The more I did so the more I was convinced that gonorrhœa was capable of causing chancre, and *vice versa*. I confine my remarks now to the infecting chancre, though my researches were prosecuted with both it and the non-indurated species. As I have said, I was unaware of the fact that the latter could not produce syphilis, and of many other radical points of difference; but as we all know their essential characteristics at the present day, it will be better not to state any results relative to the gonorrhœa caused by the non-infecting chancre till we have fully considered the facts which I collected relative to the other variety.

On the 10th of August, 1851, Private H., of the same regiment and company as the man whose case has been related, came into hospital with an indurated

chancre of the glans. He stated to me that he had returned from a scout on the second of August, and that same night had connection with a Mexican woman. Private R. went with him, and had connection with the same woman immediately afterward. Prior to this H. had had no opportunity, for seventeen days, of having sexual intercourse. Twice, however, since his connection with the woman above mentioned, he had indulged with another woman. The name of the first woman was Jesusa, of the second Juana.

The following day Private R. reported at the hospital with a gonorrhœa. He confirmed H.'s story in all its points, and stated that he was certain Jesusa had given him the disease; that he too had been on the scout, had had no intercourse with women for twenty days before that with Jesusa, and none since. Both these men were good soldiers, and there was no possible reason why they should not tell the whole truth about the matters involved.

I examined R. very carefully, and could discover no sign of the existence of a chancre: a bougie passed readily into the bladder, and there was no roughness at any point of the urethra. He had been attacked on the fifth day after intercourse with Jesusa.

I then paid a visit to Jesusa, and induced her to consent to an examination. This was as critical and as searching as it was possible to make it. There was an indurated chancre at the posterior commissure

of the labia, and indurated buboes in both groins. But there was not the least evidence of vaginal disease of any kind. The labia, nymphæ, and all the other parts were perfectly healthy, except at the point mentioned. She had been affected for nearly a month, but had never, as she said, had any other disease of her genitals.

I then examined Juana, the woman with whom H. had had connection subsequently to that with Jesusa. There was no evidence of disease of any kind. She informed me that over a year previously she had had a vaginal discharge, but had been healthy since that period.

I inoculated H., R., and Jesusa with the secretions of their own diseases, but with negative results.

All three were subsequently attacked with secondary syphilis, though in R. the symptoms were very slight, consisting only of alopecia and nocturnal pains. These were cured with mercury.

H. had severe constitutional symptoms, for which he underwent treatment with mercury for four or five months, when he was discharged the service, his term of enlistment having expired, and I never saw him again.

Jesusa had mild constitutional symptoms, consisting of a roseolous eruption, which was cured by the use of mercury. Subsequently she had mucous patches in the fauces, and condylomata around the anus, which also disappeared under the use of mer-

cury. These latter manifestations appeared after I left the neighborhood, but were communicated to me by the medical officer who relieved me.

Here, then, we have a woman with an indurated chancre communicating a like disease to one man and gonorrhoea to another, both of whom had connection with her the same day. It may be said, as before, that Private R. had a concealed chancre, or, it may be alleged, that Jesusa had gonorrhoea in addition to her chancre. I am sure neither of these conditions existed. I looked for them, expecting to find them, and was disappointed at my want of success. I could not explain the fact that inoculation proved abortive any more than I could the affirmative results which were obtained in the instances mentioned in the last lecture. I therefore hesitated to publish the cases until I could prosecute my investigations further; I had no other opportunities in New Mexico of so doing. In the year 1854 I became acquainted with M. Bassereau's doctrines as contained in his *Traité des Affections de la Peau Symptomatiques de la Syphilis*; and in 1859 the results of M. Fournier's experiments, by which the non-auto-inoculability of the virus of the infecting chancre was demonstrated, reached me. Here, then, were the explanations of the negative results which had been obtained by inoculating the individuals to whom I have referred with the secretion from their own diseased tissues, and of the successful results which had followed the operation in healthy persons.

It was in 1859, too, that another case occurred in my practice, which gave additional confirmation to the opinion relative to gonorrhoea and chancre which I now hold. A gentleman came to me in great distress and informed me that he was laboring under a venereal disease, which he believed he had given to his wife. I examined him and found a small indurated chancre on the corona, with indurated buboes in both groins. He had suffered under the disease for eighteen days, and had contracted it during a temporary absence from home a month previously. During this absence he had visited a house of prostitution once, and had had sexual intercourse but once. There had never been any discharge from the urethra. Shame had prevented him from coming sooner for treatment, and only the fact of his wife becoming diseased had caused him to come to me at all. He had only had sexual intercourse with her twice since the chancre had appeared, and not at all since she had become affected. She had no suspicion that she had contracted her disease from her husband, and had no idea of its true character. This much I learned from him, and at his request paid a visit to his wife.

I had known this lady well. She was a modest and virtuous woman, intelligent and well educated. She consented to my making an examination, which I did—having the recollection of my previous cases before me—in the most thorough manner with the

speculum. There was very severe vaginal inflammation, and a most profuse discharge, but not the slightest vestige of a chancre. I syringed the parts thoroughly with a French self-acting *pompe*, and again examined the genital organs carefully, and again without detecting the slightest evidence of ulceration. The neck and mouth of the womb were perfectly healthy, the inflammation being limited to the first three inches of the vagina.

For the husband I directed the use of a solution of tannin to the chancre, and the internal administration of mercury; for the wife I prescribed injections of a weak solution of nitrate of silver. During the fourth month mild secondary symptoms appeared in the husband. There were a slight erythematous eruption on the arms and breast, and alopecia, which supervened on well-marked syphilitic fever. Several months subsequently he had nocturnal pains in his bones. All these manifestations disappeared under the continued use of mercury and iodide of potassium. The wife had no secondary symptoms while she was under my observation, which was for more than a year, except severe gonorrhœal rheumatism, which I treated with corrosive sublimate and iodide of potassium, and which was soon relieved. The vaginal inflammation was soon cured, but during its progress a bubo formed in the right groin, which ran rapidly on to suppuration, but the pus of which I found, by three attempts on healthy persons, was not

inoculable. I felt justified in making these experiments, as I felt sure the bubo was not produced by absorption of pus by the lymphatics.

This is also a most instructive case, and one which of itself is sufficient to establish the fact that chancreous matter will give rise to gonorrhœa. Taken in connection with those previously mentioned, I do not see how there can be any reasonable doubt on the subject.

But besides these, I have met with a number of cases of urethral discharge followed by constitutional symptoms, and in which I could not detect a chancre, but of which I was not able to trace out the history as thoroughly as in the cases I have detailed. Others have met with them, but, without stopping to inquire, they have set them down as instances of Ricord's *chancre larvée*. You will meet with these, too. All I ask is that you do not take the concealed chancre for granted. Search for it, and if it is there you will find it.

There is a man now in the infirmary who is laboring under constitutional syphilis, and who declares that he never had any disease but a gonorrhœa. There is no sign externally of a chancre, and no obstruction to the free passage of a bougie. He has never had a bubo, and yet he has an undoubted syphilitic papular eruption, and, as you see, has lost his hair. How are such cases to be explained more reasonably than upon the view I offer you? Ricord

and his disciples would perhaps say he has had a urethral chancre and buboes, which latter were small and escaped observation. But scarcely five weeks have elapsed since his gonorrhoea was cured, and it is not probable that the buboes, if they ever existed, would have disappeared in that period. We know that they often persist for a long time after the chancre, to which they owe their origin, is healed. That there is not the slightest affection of the lymphatic glands in his groin, is very evident. It is a forced assumption therefore to declare that there was a chancre which was not discovered. As I said before, a urethral chancre is by no means difficult of detection. Even admitting that it may be seated far from the meatus beyond the sight, it would be easy to find it with your fingers on the outside of the urethra and a bougie inside.

Why, in a syphilitic gonorrhoea, is there no indurated bubo? The question is an important one, but one which I think admits of a satisfactory answer. I believe the reason is to be found in the fact that the lymphatics do not take up the poison from a mucous membrane in a state of integrity, but only from a solution of continuity such as a chancre produces. Hence the virus enters the blood through the veins and produces constitutional syphilis, without, however, causing an indurated bubo. Buboes are occasionally formed in cases of syphilitic gonorrhoea, as in the instance mentioned to you in this lecture; but

then they are symptomatic, just like the buboes of all kinds of urethral discharge, simulating gonorrhoea, but in which there is no chancre. When, in a case which you conceive to be one of gonorrhoea alone, you find an indurated bubo, you may be sure there is a chancre, and if you look for it carefully you will not, I think, fail to find it.

I believe, therefore, that from the facts brought forward, the conclusions are legitimately deducible—

1st. That the virus of an infecting chancre, when deposited on a secreting mucous surface upon which there is no solution of continuity, may give rise to gonorrhoea unattended by chancre, but which is syphilitic in its character, and capable of producing constitutional disease.

2d. That the matter of such a gonorrhoea is capable of causing an infecting chancre, either by natural or artificial inoculation, which chancre is followed by constitutional syphilis.

Thus, therefore, the existence of syphilitic gonorrhoea is, I think, sufficiently established.

In the next lecture we will consider the subject of non-syphilitic gonorrhoea and its mode of origin.

LECTURE XVIII.

GONORRHOEA PRODUCED BY THE VIRUS OF A NON-INFECTING CHANCRE — CASES — EXPERIMENTS — NON-INFECTING CHANCRE PRODUCED BY INOCULATION WITH GONORRHOEAL MATTER — EXPERIMENT—TWO SPECIES OF GONORRHOEA, SYPHILITIC AND SIMPLE, SHOWN TO EXIST.

HAVING given you the facts upon which I base the conclusion that the virus of an infecting chancre will, under certain circumstances, cause one form of gonorrhoea from which constitutional syphilis results, I have in the next place to bring before you the evidence relative to the influence of the virus of a non-infecting chancre, in giving rise to another form of urethral or vaginal muco-purulent discharge, without at the same time producing a chancre. The following case is one which affords a portion of that evidence:—

Corporal R., of the 3d U. S. Infantry, entered the hospital August 10th, 1850, with gonorrhoea. The discharge was just commencing, though there was a good deal of tenderness of the urethra and pain on micturition, but no evidence of chancre. He had contracted the disease, as he informed me, from a

woman named Anastasia, with whom he had had connection on the night of the eighth. He had not had sexual intercourse since that time.

I sent for Anastasia, who was a hospital laundress, and examined her at the hospital. She had a large non-indurated chancre on the posterior wall of the vagina, about half an inch from the entrance, but no vaginitis. I syringed out the canal and covered the chancre with lint, so as to absorb the discharge, and thus to prevent its being spread over the mucous membrane. The next morning I examined her again carefully with the speculum. The lint was undisturbed, and there was not the least sign of any discharge from any other part of the genitals. I inoculated her with the discharge from the chancre, and with an affirmative result. I concluded—erroneously, as we now well know—that she had syphilis, and I placed her as soon as possible under the influence of mercury. In time her chancre healed. There was no bubo and no constitutional symptoms.

To return to the corporal. I made up my mind that there was a *chancre larvée*, and my examination was renewed, but unsuccessfully. I inoculated him with the gonorrhœal matter, but with a negative result. Two others were also inoculated with it unsuccessfully. I repeated the operation; but still without success. The case was treated with injections of nitrate of silver and balsam copaibæ. The discharge commenced to diminish immediately, and on

the first of September he was discharged from the hospital, cured.

This case occurred, it will be seen, nearly a year before the first of those mentioned in the previous lectures. It did not particularly attract my attention. Although I could detect no urethral chancre on the most thorough exploration, I was so completely imbued with Ricord's doctrines, that I concluded there was one of course. I am very well convinced now that there was not.

After the occurrence of the cases which were detailed in Lecture XVI., my attention was more particularly directed to the subject of venereal diseases, and I became less disposed to accept the doctrines of others without questioning their correctness. But I was still unable to account for many of the phenomena observed, and, as has already been said, it was not till the publication of M. Bassereau's doctrines, and of the results obtained by other syphilologists, that I was able to reconcile my results with theirs.

On the 3d of September, 1851, a Mexican lady consulted me for a vaginal discharge, with which she had been affected for several weeks, and which she alleged she had contracted from her husband. On examination I could detect nothing but vaginal inflammation, which gave rise to a not very profuse muco-purulent discharge. I prescribed injection of solution of tannin.

The next day the husband applied to me. He had

a sore on his glans penis, which he said had existed for over a month. There was a large bubo in the right groin, which had suppurated, and which I opened. I inoculated him with the pus from this bubo, and produced a chancre, which was subsequently cauterized. He was treated with mercury internally and astringent applications to the sore on the penis, and soon recovered. There were no secondary symptoms in either instance.

This case, taken in connection with those which I had observed previously, and which were followed by constitutional syphilis, unsettled my views very much, and a few days subsequently another, very similar to it, came under my observation. All the patients whom I afterward treated for gonorrhœa, while I was in New Mexico, I inoculated, but without obtaining any successful results. Subsequently, in 1859, I resumed the consideration of the subject. I now perceived why my inoculations of the infecting chancre had been successful on others and not on the individuals who had the chancres, and why the virus of the non-infecting chancre was so readily inoculated on the affected person. I became convinced, too, that there were the two species of gonorrhœa which I have mentioned; but I did not understand why the matter of one should be inoculable on healthy persons, and that of the other neither on the diseased individual nor on others who were healthy; for never, in all my attempts, had I been able to get the matter of a gon-

orrhoea, which was not produced by an infecting chancre, to cause a chancre. I therefore commenced a series of experiments with reference to the whole subject. The first were relative to the power of the virus of a soft chancre to cause gonorrhoea.

J. H. came under my care, with chancre of the soft variety, August 20th, 1859. It was situated on the corona. There was a symptomatic bubo, which had suppurated, but no urethral discharge. With his full consent, after having had the whole subject explained to him, I introduced a catheter, into the *cul-de-sac* of which I had put a quantity of the pus from his chancre, an inch into the urethra, keeping it there several minutes, and turning it around so as to allow the matter to escape. He was then told not to urinate for three or four hours.

On the twenty-second he complained of pain on urinating, and of tenderness at a point situated about an inch and a half from the meatus; and later in the day a few drops of muco-pus escaped. No urethral chancre could be discovered after thorough examination.

On the twenty-fourth the discharge was well established. I examined again with a speculum, and, though the inflamed state of the urethra was readily perceived, no chancre was detected.

I inoculated him on each thigh: in one place with the pus from the chancre, in the other with the

urethral discharge. The first caused a chancre, the second resulted in nothing.

On the thirtieth I opened the bubo, and inoculated him with the pus. An undoubted soft chancre was produced. This and the one previously formed were well cauterized, and soon healed.

On the thirty-first the urethral discharge had become quite profuse, and I inoculated him with it again. The result was negative.

On the fourth of September I again inoculated him unsuccessfully.

Injections of chloride of zinc were now given him, under the use of which, by the third of October, he was cured. The chancre had healed some time previously, as did the ulcer in the groin, under the application of the carbo-sulphuric acid paste.

W. H., a private 4th U. S. Artillery, entered hospital October 2d, 1859, with soft chancre of the prepuce. There was neither glandular swelling nor urethral discharge. He consented to my inserting a little of the pus from the chancre into his urethra. I introduced a few drops, on the end of a probe, just inside the meatus.

On the third of October there was evidence of urethral inflammation, and on the fourth the discharge commenced. The tenderness did not extend back for more than an inch, so that I could see the whole inflamed surface with the speculum. There was not the least sign of ulceration.

On the fifth I inoculated him both with the secretion from the chancre and that from the urethra. The first resulted in a chancre, the other was negative.

He was discharged from the hospital November thirteenth, cured.

J. S. applied to me January 2d, 1860, with a soft chancre on the dorsum of the penis, just behind the corona. There was neither urethral discharge nor bubo. He allowed me, on the fifth, to introduce a little of the secretion from the chancre between the lips of the meatus. On the sixth there was a slight discharge. Careful examination convinced me that there was no chancre. On the eighth the discharge was quite profuse, and there were the ordinary symptoms of a severe attack of gonorrhœa. Inoculation with the matter direct from the chancre produced the characteristic chancrous pustule; that with the urethral discharge caused nothing.

This completes my experiments relative to the production of gonorrhœa by the contact of the virus of a non-indurated chancre with a secreting mucous surface free from abrasion. Taken in connection with the cases previously mentioned, they appear to me to be sufficiently conclusive. I do not see why there should be this indisposition to admit that the virus of a chancre can produce gonorrhœa. Acrid vaginal discharges are admitted to cause urethral inflammation; other kinds of pus are acknowledged to be capa-

ble of inducing it; but so great is the blind adherence to Ricord's views, that it is heresy to attribute this power to chancrous virus of either kind.

With reference to the influence of gonorrhœal discharge to produce soft chancre, I have but a single experiment which tends to establish the fact. In the experiments mentioned, as well as in the cases cited, you will recollect that all my attempts to cause chancres with the gonorrhœal discharge failed. It was only when the gonorrhœa was due to the virus of an infecting chancre that a chancre was produced, and then it was of the indurated variety.

In the case last detailed, that of J. S., I performed inoculation on the eighth of January with the gonorrhœal matter with a negative result. On the fifteenth I induced him to allow me to try more decided means. I therefore selected a spot on the inner side of the right thigh, and scarified it with a lancet, so as to just draw blood. The spot was about the size of a half dime piece. A piece of lint was saturated with the gonorrhœal virus, and fastened down to the scarified spot with a strip of adhesive plaster. At the end of twenty-four hours it was removed. A thin crust, composed apparently of dried blood and pus, had formed. On the third day there was a little redness around the crust, which latter was elevated above the surrounding parts. On the fifth day the crust broke in the center, and a quantity of pus was discharged. On the sixth it was entirely detached. I

now took a little of the secretion from this sore and introduced it under the skin of the opposite thigh. The specific chancrous pustule was formed. On the tenth day I destroyed both chancres with the carbo-sulphuric acid paste.

This experiment shows that if the contact is sufficiently intimate and prolonged, the secretion of a gonorrhœa will give origin to a non-indurated chancre. In all probability the virus of the soft chancre, when deposited on a mucous surface, becomes modified more or less by the action of the mucous membrane, and loses a good deal of its virulence. When we reflect, also, that most gonorrhœas which we meet with are not directly produced by chancrous pus, but by the virus after it has been subjected to the action of many mucous membranes, we have one reason why inoculations have so uniformly failed, besides that due to imperfect contact. In addition, it must not be forgotten that many urethral discharges which pass for gonorrhœa are not at all specific, but merely due to simple inflammation of the urethra or vagina.

From the experiments and cases which have been brought forward this morning, I think it must be admitted that the existence of gonorrhœa, due to the influence of the virus of a soft chancre, is sufficiently established; and that the matter of such a gonorrhœal discharge, when inoculated with due care, will give rise to a non-indurated chancre.

Since my residence in this city, (Baltimore,) I have

had several cases under my charge in which there was strong reason for believing that existing gonorrhœa had been produced in the manner above stated; but, as I have not been able to obtain, as yet, full histories of them, I do not bring them more particularly before you.

While, however, I contend for this property of the chancrous virus of both kinds to cause gonorrhœa, I do not believe that the matter of a gonorrhœa which owes its origin to the virus of a non-indurated chancre will cause such a chancre in another person by simple contact during sexual intercourse. If, however, for instance, a man has an abrasion of the glans, and has connection with a woman who has a profuse gonorrhœal discharge, and if he does not wash afterward, but allows the prepuce to keep the gonorrhœal matter in contact with the abrasion, I think it extremely probable that a non-indurated chancre will be produced.

With reference to the gonorrhœa caused by the virus of an infecting chancre, I am not so sure, though I have no facts tending to show that simple contact with a surface (such as that of the glans) upon which there is no abrasion, will cause an indurated chancre. By inoculation, such a chancre will be produced, if the operation is performed on a person who has not and never has had syphilis.

In the following lectures, therefore, I shall describe to you the two kinds of gonorrhœa which I recognize,

viz.: syphilitic gonorrhœa and simple gonorrhœa. Under the terms urethritis and vaginitis will be embraced all those cases of non-specific inflammation which are not contagious nor inoculable, and which are due to the action of irritants other than the virus of infecting or non-infecting chancres, directly or remotely applied. We shall then see that there are other points of difference than those mentioned; and I think there is reason for believing that further investigation will tend still more strongly to show that they are capable of being readily distinguished one from the other.

LECTURE XIX.

SYPHILITIC GONORRHOEA—SYMPTOMS—DIAGNOSIS—CURE—CONSTITUTIONAL SYMPTOMS—GONORRHOEAL RHEUMATISM AND GONORRHOEAL IRITIS—CASE CITED BY MR. COOTE—TREATMENT OF SYPHILITIC GONORRHOEA—IN MEN—IN WOMEN—CARE NECESSARY TO PREVENT ABRASIONS.

A MAN after having had sexual intercourse with a woman affected with an indurated chancre, or with a gonorrhœa caused by such a chancre, is liable, under the circumstances already mentioned, to specific inflammation of the urethra, attended with pain, increased on micturition, and with a discharge of muco-pus from the meatus.

There is a true incubatory period, which varies from three to eight days, as far as my experience goes, during which there is no evidence of disease. The discharge is, from the beginning, composed to a greater extent of pus than of mucus. The inflammation is always at first seated in the fossa navicularis, and it does not show much disposition to extend itself. The pain is not a very prominent symptom unless during the passage of urine, and then it is of a sharp, burning character. Erections do not cause much discomfort.

By the fifth or sixth day the discharge is well

established. It is of a yellow color, and scarcely distinguishable from pure pus. At times, however, it is slightly viscid from the presence of mucus.

The inflammation usually reaches its height by the twentieth day. It commences then to decline, and if left to itself, after lasting altogether about forty days, disappears—the discharge retaining its purulent character to the last.

Along the inflamed part of the urethra induration can sometimes be readily detected by the touch applied externally, and by a bougie introduced into the canal. There is no roughness and no narrowing of the urethra, at least during the active stage of the disease.

Buboes are not usually produced, and when they are, they are sympathetic, and do not contain inoculable pus.

Epididymitis I have never seen as an attendant of this form of gonorrhœa; probably its non-occurrence is due to the fact that the inflammation of the urethra does not extend as far back as the orifices of the ejaculatory ducts. Without therefore pretending to deny its occurrence, I can only say that in ten cases of undoubted syphilitic gonorrhœa which have come under my notice in men, I have not met with a case thus complicated.

In fact, syphilitic gonorrhœa is not, so far as its local manifestations go, a very severe affection. It is much milder than the other variety. It runs a de-

terminate course when let alone, and is readily controlled, and its duration abridged by appropriate treatment.

The diagnosis between this and simple gonorrhoea is not difficult as regards well-marked cases of each, but there are times when you will find it impossible to discriminate unless by inoculation, which would not be allowable as an ordinary practice. If you can ascertain whether or not there has been any period of incubation, you will have the most reliable indication relative to the character of the disease.

Syphilitic gonorrhoea in women is usually met with as affecting the vagina. I have seen five cases, and in one only was the vulva the seat of the disease. Unless you can trace the history of the case, you have no certain means of diagnosis, until the period has arrived at which secondary symptoms may be looked for.

So far as the treatment of syphilitic gonorrhoea is concerned, the recognition of it is not material, except with the view of preventing constitutional infection. The number of cases of it are so few, as compared with those due to the virus of a non-infecting chancre, that it would not be advisable for you to administer mercury in any case of gonorrhoea until evidence of constitutional disease is afforded, unless you have been able, by careful inquiry, to satisfy yourself perfectly in regard to the originating cause.

All cases of urethral or vaginal discharge which are followed by secondary symptoms, and in which no chancre can be detected after careful examination, I regard as cases of syphilitic gonorrhœa. Of such I have seen fifteen cases, ten in males and five in females, but I have never considered it expedient to give mercury on a mere suspicion, and that is all which you can reasonably form from the signs afforded by the course of the inflammatory action and the phenomena which accompany it. The incubatory period is, as has been said, a valuable indication of the true nature of the affection.

The constitutional symptoms which follow syphilitic gonorrhœa are those of constitutional syphilis. There is, however, a tendency to early manifestations of disease of the fibrous structures, which are not ordinarily met with after infecting chancres. Of the fifteen cases of syphilitic gonorrhœa which have come under my observation, this so-called gonorrhœal rheumatism occurred in nine, and in one of these there was very severe inflammation of both eyes. The case is an interesting one, and I therefore do not hesitate to bring the particulars of it before you.

H. C., a laborer in the employ of the quartermaster, entered hospital at Fort Riley, Kansas, April 6th, 1853, with gonorrhœa. He reported as soon as he observed the discharge. The disease had been, as he said, contracted six days previously. He had had no sexual intercourse since. There were no

evidences of chancre, although the urethra was thoroughly explored. No examination could be obtained of the woman who had given him the disease, as she lived at Weston, Missouri, to which place C. had been on furlough. I considered the case one of ordinary gonorrhœa, and treated it with balsam copaiabæ and injections of a weak solution of nitrate of silver, one-half grain to the ounce of water. The inflammation was restricted to about an inch of the anterior extremity of the urethra.

Nothing unusual occurred till the fifteenth, when he complained of pain in his knee-joints and along the course of the gastrocnemii muscles. By night the parts about the joints were red, swollen, and painful. Motion caused intense agony, and even the slightest touch could scarcely be borne. The gonorrhœal discharge still persisted, and was no less in quantity than it had been for the last four days. Warm applications were applied to the affected joints, and acetate of potash, in drachm doses, three times a day, prescribed.

On the sixteenth the inflammation was still more intense. The acetate of potash was continued, and six cups were applied to each knee. About six ounces of blood were abstracted in all. In the mean time the copaiabæ was suspended, but the treatment of the gonorrhœa by injection was still continued.

By the twentieth the inflammation had somewhat subsided. There was, however, considerable effusion

into the cavity of each joint. The potash was continued, and a blister was applied to each knee.

On the morning of the twenty-first the patient called my attention to his eyes, which he complained of as giving him a good deal of pain. On examination I found the conjunctival vessels injected, and the irides slightly changed in color. The corneæ were cloudy; there was photophobia, and a deep-seated, dull, aching pain of the balls of both eyes. Small doses of calomel were prescribed, the extract of belladonna was rubbed over the brows, and warm water applications were often made to the eyes.

The next morning I found well-marked iritis in both eyes. The zone of vessels around each cornea was very prominent, and the corneæ were dull and hazy.

The mercury and belladonna were continued. The inflammation of the joints still existed, but was declining. The discharge from the urethra was also much less.

The treatment with mercury and belladonna was persevered with, and by the twenty-eighth the system was well under the influence of the former drug. Amendment now took place, and by the tenth of May his eyes were well, with the exception of a little injection of the conjunctival vessels, which still remained. There were no adhesions of the iris.

In the mean time the inflammation of the knee-joints was treated by compression with strips of mer-

curial plaster, and the gonorrhoea with the nitrate of silver injection as before. On the twelfth the injections were stopped, as the discharge had not been present for several days, and on the twenty-second of May the patient left the hospital and was put on convalescent duty. He continued to improve, and finally recovered, to all appearances, entirely.

On the third of July he again reported with ophthalmia. A week previously he had noticed an eruption on his chest and arms. This I found to be an erythema. He also complained of pains in his legs and head, which troubled him a good deal, especially at night-time.

I again discovered incipient iritis, but only in the right eye. Mercury and belladonna were administered, as before, and in three weeks he was well so far as his eyes were concerned. The eruption, however, still continued, and I kept up the mercury in the form of corrosive sublimate, conjoining it with iodide of potassium. This treatment was persevered with for several months, with slight intermissions, and eventually he got entirely well. His eyes, however, remained weak, and he was particularly liable to rheumatic attacks of a chronic character after exposure to cold or dampness.

I looked upon this case at the time as one of ordinary gonorrhoea, followed by gonorrhoeal rheumatism and rheumatic ophthalmia. The occurrence of a syphilitic eruption led me to correct my diagnosis,

and to consider it as a case in which there was a *chancre larvée*, though I must confess that I could not imagine where the chancre could be. Subsequently I regarded it as a case of syphilitic gonorrhœa, and such it undoubtedly was.

Mr. Coote* relates a case which presents some features in common with that just mentioned. He says, speaking of gonorrhœa and denying its identity with syphilis:—

“Gonorrhœa is followed, as already mentioned, by direct local complications, such as extension of the disease to the epididymis, to the prostate gland, the urinary bladder, the urethra or kidneys. But besides these it may produce one of the severest forms of inflammation of the conjunctiva, gonorrhœal purulent ophthalmia, by which the organ is in many cases seriously injured; gonorrhœal rheumatism, a most intractable disease, by which many a joint is permanently crippled; and a form of papular eruption. I remember a fine handsome young man, about twenty years ago, who unfortunately contracted gonorrhœa, which was followed by rheumatism and a milder form of purulent ophthalmia. Under proper treatment these diseases were subdued, and he went to the West Indies in the hope that a residence in a warm climate would free him from the possibility of a relapse. He

* A Report upon some of the more Important Points connected with the Treatment of Syphilis. London, 1857, p. 32.

returned and married, but since then has suffered from frequent recurrence of the ophthalmic attacks. I heard of him last in 1852, when he was lying in a darkened room, with the eyesight quite unfit for useful purposes, and in a questionable state as to ultimate recovery."

Mr. Coote does not appear to have the least suspicion that this case was syphilitic, but I am of the opinion that there can be very little doubt about the matter. I do not think, either, that the affection of the eye was what we know as gonorrhœal ophthalmia. Evidently, from the history, it was similar in its character to that of which I have given you the particulars in this lecture. Gonorrhœal ophthalmia is produced only by the contact of the pus of a gonorrhœa of the simple variety with the conjunctival mucous membrane. I do not think the pus of a syphilitic gonorrhœa will produce it. My opinion, however, is based merely on analogy. I have no direct facts to offer in its support.

With reference to the treatment of syphilitic gonorrhœa, I prefer to conduct it altogether by injections. Copaiba and cubebs do not appear to have much effect upon it, though occasionally during the first day or two they may lessen the discharge from the urethra. In women they cannot possibly exert the slightest influence.

Neither have I any predilection for the abortive plan of treatment with strong injections. To be

sure, I have little experience with this method. It has, however, in other hands, led to serious complications.

Weak injections of nitrate of silver, in the proportion of one-fourth to half a grain to the ounce of distilled or rain water, will be found very efficacious. They should be repeated six or eight times in the twenty-four hours, and the patient should be told to retain the fluid in contact with the diseased urethra for at least a minute. In using them he should press the penis between the thumb and fingers of the left hand, so as to close the urethra and thus prevent the injection passing into the bladder, or he should sit on the edge of a chair, so that the urethra is constricted in the perineum. The meatus should be closed with the right hand as the syringe is withdrawn.

Another very excellent injection is a solution of the chloride of zinc. This should also be weak, and should be frequently repeated. From half a grain to two grains of the chloride to an ounce of water are the ordinary limits of strength. Tannin, sulphate of zinc, acetate of lead, and alum may be used as injections, in the proportions of two or three grains to the ounce of water.

Recent experiments, made in several of the military hospitals at my suggestion, demonstrate the permanganate of potash to possess advantages over other substances used as injections in gonorrhoea. It ap-

pears to exercise a certain amount of specific influence by destroying the contagious property of the secretion from the mucous membrane. It should at first be used of weak strength—one-fourth of a grain to the ounce of distilled water—and should be gradually increased in quantity up to two grains. Eight or ten injections should be made in the twenty-four hours.

While this treatment is going on it is advantageous to render the urine less acid, and thus to lessen the pain felt during micturition. For this purpose demulcent drinks, such as flaxseed and slippery elm teas, either acidulated or not with lemon-juice, tartaric or citric acid, or the bitartrate of potash, may be freely drank. If there is any very great amount of pain, opiates may be given with or without camphor, but they are rarely necessary.

Occasional benefit is derived from the administration of saline cathartics, but I do not consider it advisable to continue them as regular means of cure.

Should there be chordee, camphor may be given at night in the dose of four or five grains. Cold-water douches to the penis are, however, more efficacious.

The diet should be unstimulating but not low; sexual intercourse should be avoided; moderate exercise should be indulged in, and the life should be

regular and temperate in all things. Hot or cold baths, as the patient may prefer, should be taken daily.

These comprise the ordinary measures to be employed in cases of syphilitic gonorrhœa. The treatment of the sympathetic bubo and other complications which may occur, will be more appropriately considered under the head of simple gonorrhœa, of which they are more frequent accompaniments.

The treatment of gonorrhœal rheumatism does not differ essentially from that proper for other forms of the disease, so far as the local measures go. Latterly I have preferred to treat it with mercury and iodide of potassium in the form already mentioned to you so frequently. I am sure I have observed that the cure is much more rapid than when reliance is placed upon the so-called antirheumatics. You must recollect that you have a syphilitic inflammation to deal with. Should iritis occur, it should be managed according to the principles already laid down.

The treatment of syphilitic gonorrhœa in women is usually even easier than in men. Injections, such as those already mentioned, may be used, the strength, however, being doubled. They should be frequently administered, the patient being in the recumbent posture, with the hips elevated, so as to retain the fluid in contact with the parts for a minute or two. Frequent injections of cold water in the in-

tervals will be found to add much to the comfort and to facilitate the cure.

In the management of syphilitic gonorrhoea, great care should be taken to avoid causing a solution of continuity in any part of the tissue over which the discharge passes or with which it may come in contact, or a chancre may be the consequence.

LECTURE XX.

SIMPLE GONORRHOEA—SYMPTOMS IN THE MALE—IN THE FEMALE—
ATTENDANT AFFECTIONS—BUBO—EPIDIDYMITIS—PROSTATITIS—
DIAGNOSIS—TREATMENT—BALANITIS—EXCRESCENCES—CON-
CLUDING REMARKS.

THE gonorrhœa caused by the virus of a non-infecting or simple chancre, or by the discharge produced in others by such a chancre, although called simple, is really a more severe affection, so far as the local manifestations are concerned, than the syphilitic variety. Although it is free from constitutional complication, it is frequently attended with other affections, which are produced by extension of the inflammatory process, by sympathy, or by contact of the virus with other tissues. As an example of the first, we have epididymitis; of the second, the sympathetic bubo; and of the third, gonorrhœal ophthalmia. Moreover, it is much more liable than syphilitic gonorrhœa to be followed by stricture of the urethra, and is less amenable to curative measures.

Simple gonorrhœa has no true period of incubation. It ordinarily commences immediately after exposure to the contagious influence, though at first the symptoms are very slight. Within twenty-four hours, however, it generally happens that the affected individual

is rendered sensible of the fact that a morbid process is going on in his urethra; and by the second or third day the discharge makes its appearance at the meatus. The first symptom is a slight itching or tickling sensation, which is increased during the passage of urine. Very soon this is aggravated into a burning pain, and, upon examination with the speculum, the urethral mucous membrane can be seen to be inflamed. The seat of the disease is at first in the fossa navicularis, but the inflammation extends ordinarily, and may even reach the bladder and kidneys. A whitish, glairy discharge now appears, which becomes yellow, and from a few drops increases in quantity to several drachms in the twenty-four hours. Micturition causes very great pain, and chordee often adds greatly to the discomfort.

Along with the urethral inflammation there is occasionally well-marked fever, and there is always more or less derangement of the appetite and of the digestive functions.

About the twentieth day the symptoms reach their height, and the disease then begins to decline. The discharge becomes more and more muciform, and in six or eight weeks longer ceases entirely. Such is the course of a simple gonorrhœa under the most favorable circumstances and without any complications. There may, however, be sympathetic buboes, epididymitis, prostatitis, abscesses, ulcerations, etc.; or the disease may be continued for a long time, pass-

ing into a chronic condition, and attended with the discharge of a white, glairy mucus; or there may be great difficulty in passing urine from the first, due to partial obliteration of the urethral canal.

In the female, the diseased condition may exist either in the vagina, the vulva, the urethra, or the uterus. Its usual seat is the former locality, from which it may spread to the others. It is a much less troublesome affection in women than in men, and more readily brought under successful treatment.

The most ordinary affection which accompanies simple gonorrhoea is bubo. This is, as you have already been told, sympathetic, just as is the enlargement of the inguinal glands from slight injuries of the foot. Generally, one gland only is implicated, and suppuration is not inevitable by any means. The gland may commence to enlarge synchronously with the appearance of the discharge, but usually two or three weeks elapse before this event takes place.

Epididymitis also generally does not occur till the acute stage of the gonorrhoea has passed. It is not due to metastasis, but to an extension of the inflammation along the ejaculatory ducts to the epididymis. At first the inflammation is limited to this structure, but it may extend to the body of the testicle.

Inflammation of the prostate gland is also caused by extension of the morbid action from the urethra. It is recognized by the constant desire which exists

to pass urine, and by the dull pain present in the perineum.

Abscesses and ulcers are not often met with as concomitants of gonorrhœa.

Simple gonorrhœa may be, in well-defined cases, distinguished from that which is of syphilitic origin by the absence of any incubatory period, by its greater severity, and by the extension of the inflammation along the track of the urethra. At a subsequent period, the absence of constitutional symptoms is sufficient to show what was the character of this disease; but this discovery is generally made too late to be of any practical advantage, except as a relief to the mind of the patient. As has been said, however, the diagnosis is really of very little consequence, for the reason that the course of treatment is very similar in both diseases, and such accidental affections as occur in each are to be managed according to general principles.

If the inflammation of the urethra is very severe, great advantage will be derived from leeches, which may be applied, to the number of a dozen, to the penis, along the course of the urethra. General blood-letting is not necessary. A saline cathartic may, however, be given; and demulcent drinks, such as those previously mentioned, are always admissible.

After the discharge is well established, reliance should be placed upon injections, and those already

recommended as preferable in syphilitic gonorrhœa will be found most advantageous in the form under consideration. Copaiba and cubebs I do not now use at all. They certainly exert some influence in lessening the discharge, but there are many inconveniences attendant upon their employment. Copaiba is more efficacious than cubebs. If you want to use it, you will find the following mixture capable of doing more good than the uncombined balsam, and it is not much more disagreeable to the taste or stomach:—

R̄.—Bals. Copaibæ, ℥ij;
Spts. Etheris Nit. ℥j;
Tinct. Opii,
Tinct. Iodini, aa ℥j;
Magnesiæ, ℥ij;
Mucil. Acaciæ, ℥v. M.

Of this mixture from one to two teaspoonfuls may be taken thrice daily.

No internal treatment, however, should be depended upon to the exclusion of injections.

Sexual intercourse should be avoided, and the diet should be plain but nutritious. I have seen cases in which the urethral discharge had continued for many months, mainly because of the low and insufficient diet to which the patients had been subjected. Stimulants must be avoided, as should also salt meat. I have several times known the discharge brought back by a single glass of liquor or a meal of which salt

pork formed a portion. Riding on horseback is also calculated to keep up the inflammation.

In women, the same general means of treatment are applicable, though local blood-letting is never necessary, so far as my experience goes; and the disease is altogether more amenable to remedial measures than is the affection in men. As in syphilitic gonorrhœa, the strength of the injections may be much greater.

Buboes, in both sexes, are not difficult to manage, if taken in time. As soon as the gland begins to enlarge or to become painful, ten or fifteen leeches may be applied to the groin, especially over the affected gland, with excellent effect. Rest should be enjoined, and lotions of chloride of ammonium will be found useful. I do not think irritating applications are generally admissible at this stage. Should the swelling exhibit a tendency to become indolent, the solution of iodine with iodide of potassium in glycerin, mentioned on page 54, or the iodide of lead ointment, will be found beneficial. Pressure by a graduated compress and bandage, or by repeated applications of collodion, will be advantageous. Should suppuration occur, the abscess should be opened. I prefer to do so, for reasons already stated, by multiple incisions. In my experience, the bubo of gonorrhœa is more apt to suppurate than the sympathetic bubo due to a soft chancre, and therefore requires more active treatment.

Epididymitis, in the first stages, is most advanta-

geously treated by leeches and perfect rest in the recumbent position. At the same time, discutient lotions, of which the chloride of ammonium is the best, should be kept constantly applied. After the acute stage has passed, compression by adhesive plaster will accomplish good results, especially if the body of the testicle has become affected. During the whole treatment the scrotum must be kept in a suspensory bandage. If induration occurs, iodide of potassium is to be administered internally, and the iodized glycerin may be applied externally.

Should prostatitis supervene, much good will be derived from the application of leeches to the perineum. These, with warm applications and demulcent drinks, constitute the treatment to be adopted.

The chronic stage of simple gonorrhœa, into which it occasionally passes, and which is commonly called gleet, is exceedingly tedious, as regards its treatment, both to the patient and the surgeon. Sometimes, in spite of all remedial measures, the discharge continues for years, retaining during that period more or less of the contagious property. As I have just told you, you will often find that the discharge is in a great measure due to the debilitated condition to which the patient has been reduced by severe treatment, low diet, want of exercise, etc. One of the first things, therefore, which you ordinarily have to do is to put the affected individual upon a good, plain, nutritious diet; to find some occupation for the mind; to direct

that systematic but not severe exercise be taken. You will also find that the greatest benefit will be derived from cold plunge baths, followed by friction of the skin with coarse towels or hair brushes. As internal medicines, iron and quinine may be given always with advantage. A pill, composed of two grains of the sulphate of iron and half a grain of quinine, may be taken three times a day. The oxalate or citrate of iron may be substituted in the same dose. In addition, I have derived great benefit from the use of tincture of cantharides, conjoined with strychnia, according to the following recipe:—

Ry.—Tinct. Cantharidis, ℥ss;
Strychniæ, gr. j;
Syrupi Limonis, ℥iij. M.

Of this a teaspoonful should be taken morning and evening.

Injections should be persevered with, changing one for another as they seem to lose their effect.

Blisters applied to the penis along the course of the urethra have been recommended, but I cannot say that I ever saw much good result from them, and they certainly cause great inconvenience.

Medicated bougies are more valuable adjuncts. Mercurial ointment, carbonate of zinc ointment, or iodine ointment prove useful at times. The latter I have found to produce the best effects. Dozens of

others have been employed, and you will sometimes find it necessary to try a good many.

The urethral discharges, produced by simple urethritis, or the discharges from the urethra or the vagina, dependent upon various causes, none of them of a specific character, are not, properly speaking, venereal, and do not come within the scope of these lectures. Cleanliness and astringent injections are the only measures necessary to cure them.

The inflammation of a simple gonorrhœa may spread to the glans penis and prepuce, producing what are called balanitis, posthitis, and balano-posthitis. Internal remedies are not required in any of these affections. Frequent washing with warm water, and the application of strips of lint moistened with a solution of permanganate of potassa or with glycerin, are ordinarily sufficient. If the disease persists, weak lotions of nitrate of silver, tannin, alum, sulphate of zinc, or acetate of lead will be more efficacious.

Should the inflammation proceed from any other cause, the same measures will be all-sufficient to cure it.

Excrescences, or vegetations, differing from those due to syphilitic infection, are caused by the direct application of the gonorrhœal discharge to the parts in the vicinity of the genitals. They sometimes attain a large size, and are troublesome from the pruritus they excite. I have never met with them in syphilitic

gonorrhœa. Cleanliness is the first requisite to their cure. As a local application, I know of nothing better than nitric acid. If large, they may be cut off and the surface cauterized with the acid.

There are several other accidents which supervene on gonorrhœa, and to which I might direct your attention; but as you will find them fully treated of in the text-books on surgery and those specially devoted to the consideration of diseases of the genital organs, and as I have nothing special to say to you in regard to them, I do not propose to enter upon their discussion. In the remarks which I have made to you and will hereafter make to you on cases of such accidents as they come before us, I shall give you the information in regard to them which I possess, and will endeavor to furnish you correct ideas relative to their treatment, both from precept and example. The present course of lectures was undertaken more with the intention of correcting many erroneous views which I perceived you to entertain, and to give you the results of an experience which has not been limited. How far I have succeeded in communicating to you right ideas relative to the pathology and treatment of venereal diseases, is for time to determine. I think, however, that the labor has not been in vain; and I thank you for the attention and interest you have evinced both in this amphitheater and in the infirmary wards.

I have not touched upon the subject of preventing venereal diseases in persons who will expose themselves to contagion, because to consider it fully would carry us far into the domain of public hygiene, and the popular mind is not yet, in this country, prepared to look upon the matter in its true light. Ablution, after sexual congress with either a healthy or diseased person, should never be omitted; but the best of all preventives is indicated in the Latin proverb, "*Cassidatissima virtus.*"

THE END.

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